International dairy product aid & trade 1960s1̃990s: focusing on the EU and India in operation flood

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INTERNATIONAL DAIRY PRODUCT AID & TRADE 1960s~1990s:

Focusing on the EU and India in Operation Flood

By

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ABSTRACT

This thesis investigates the interrelationship between dairy aid and trade. After WW-II US dairy aid contributed to rises in consumption and sales in the Pacific; US domestic politics and Cold War strategy influenced aid programmes. Similarly, when dairy surpluses in the EEC (also known as the EC; currently the EU) coincided with shortages in India in the 1960s, the EEC sought to: maintain the CAP *status quo*, dispose of its "Butter Mountain", and earn political cachet such as the US enjoyed *via* PL 480 food aid - while assisting India. Proceeds from "monetised" EEC butter oil and milk powder donations were to be invested in Indian dairy infrastructure.

As the largest Asian country with a "dairy culture", India was a suitable setting for Operation Flood (OF), the world's largest dairy development programme ca. 1970-1996. Because so much debate on aid, trade and development can be illustrated by OF, this thesis chose India as its case study. Claims that dairying could benefit women and minorities attracted World Bank loans, but subjected OF to virulent charges of unmet goals. Worse, warned OF detractors, India could become permanently dependent on Europe's lactic largess. OF officials countered that they were successfully carrying out their original mission to improve the dairy marketing system of India.

Thesis maps and charts based on the Agrostat·PC database (FAO) show India increased dairy production and consumption significantly during OF. As some comparable countries declined, India moved toward self-sufficiency and status as the world's number two milk producer. Proper pricing by Indian authorities ensured that dairy aid was not a long-term disincentive to farmers and, in the end, increased dairy autonomy.

Prospects for "replication" of Operation Flood are limited by a lack of settings suitable for such programmes, and by reduced stocks available for aid. But dairy aid will have a continued role in emergency aid, and in structural adjustment in those poor countries whose food security declines as GATT/WTO liberalises international agricultural trade.

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DECLARATION

This work is based upon the individual research of Bruce A. Scholten, under the supervision of thesis advisor Dr. Peter J. Atkins. This thesis has not been submitted for a degree at any other institution.

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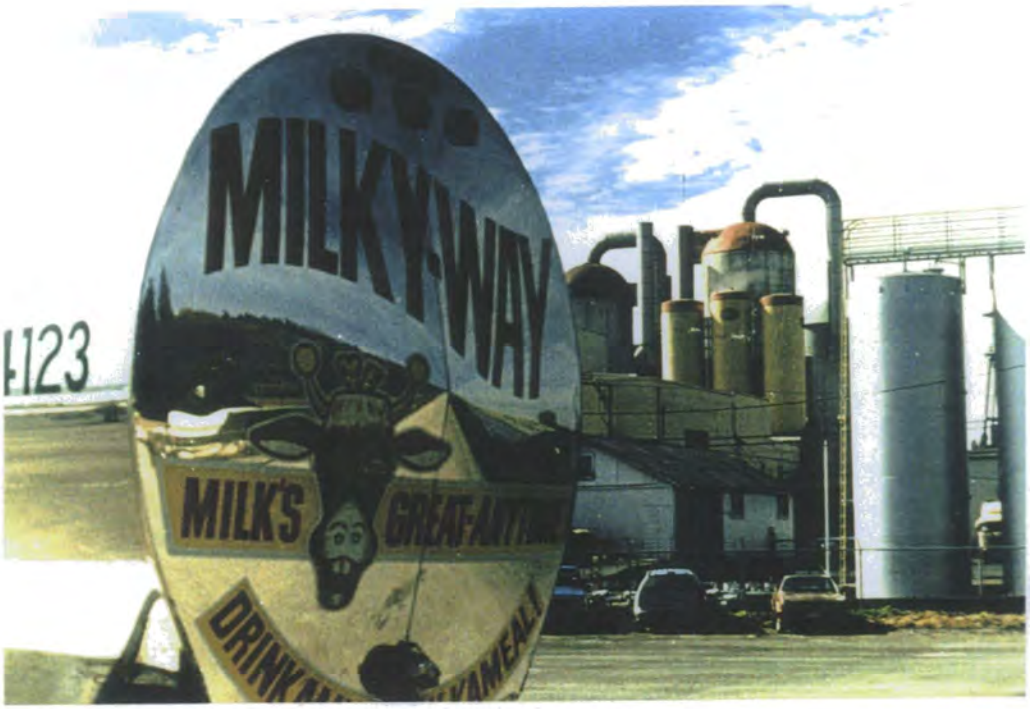

This facility in Lynden, Washington, USA can process 2.04 million kilograms of milk per day into skim milk powder (SMP). Owned by the farmers' cooperative Darigold, the largest single producer of SMP in the US, it is a prime source of milk powder exports to Africa, Asia and South America. It is fundamentally similar to plants in the EEC that produced dairy aid for India, where it was "monetised" to fund such plants and transport infrastructure, so Indian farmers' cooperatives could process and distribute powder, etc. from cow and buffalo milk in the programme called Operation Flood.

The cow is the foster mother of the human race. From the time of the ancient Hindoo to this time have the thoughts of men turned to this kindly and beneficent creature as one of the chief sustaining forces of human life.

W.D. Hoard, founder *Hoard's Dairyman*, 1885

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It is crucial for research of this kind to be grounded in one cohesive database, one with its own interior consistency. Thus, I am thankful to the United Nations Food and Agricultural Organisation (UN/FAO) for use of Agrostat·PC, as well as to the World Food Programme (WFP) for ongoing input. Mr. Bruce Crawshaw (an independent policy analyst with much WFP and FAO experience) was especially helpful in obtaining information from the WFP/FAO in Rome. I am grateful also for communications from Dr. Verghese Kurien, director of Operation Flood, the world's largest and longest-term dairy development project in India, which serves as the case-study of development aid in this thesis. In the western hemisphere, Douglas C. Marshall and Roger D. Miller, officers of Darigold, Inc., have my appreciation for outlining the geography of dairy production in the United States, the US role in the world market and aid programmes involving milk powder and other products, as well as tours of several plants in the Seattle and Lynden area. I would also like to acknowledge Steven A. Larson of *Hoard's Dairyman*, whose article assignments worked symbiotically with my academic research. Most of all, I thank my wife Martha Clemewell Young-Scholten, my partner in exploring the varied geographies of this world.

GLOSSARY

Additionality: use of food aid to "provide additional consumption for people whose incomes are too low for them to buy sufficient food".[1]

AI: artificial insemination of dairy cows or other animals.

BO: butter oil; accompanied SMP as dairy aid from the EEC to India.

BST: (bovine somatotropin) naturally occurring hormone stimulating milk production; synthesised from DNA in 1980s. Also called BGH (bovine growth hormone).

CAP: Common Agricultural Policy (of the EU *aka* EC or EEC or Common Market).

CFA: Committee on Food Aid Policies and Programmes; oversees WFP.

DC: developed country. This thesis uses the older acronym IC (industrialised country) interchangeably with DC to denote rich countries with advanced service sectors.

EEC: European Economic Community. As per common usage this thesis uses EEC interchangeably with (EC) for the European Communities est. in 1957 Treaty of Rome; called the European Union (EU) after 1992 Maastricht Treaty signing.

EU: European Union (Maastricht Summit: Dec.9-11, 1991; Treaty signed Feb.7, 1992).[2]

FAO: Food and Agriculture Organisation of the UN.

FFW: food-for-work, i.e. food aid as partial payment, e.g. in road-building in Turkey.

GATT: General Agreement on Tariffs & Trade; begun 1947, superseded by WTO 1994.

GOI: Government of India.

IC: industrialised country or developed country (DC). ICs comprise "The North".

IDC: Indian Dairy Corporation.

IFAD: International Fund for Agricultural Development (UN).

IMF: International Monetary Fund.

LDC: unless specified, used collectively in this thesis for all poor countries, including less developed countries (LDCs), low-income-food-deficit countries (LIFD), and what formerly were termed least-developed countries (LLDCs). LDCs are sometimes called the Third World or the South. (In 1991 the UN changed previous nomenclature by defining "least developed countries" or LDCs as "those low-income countries that are suffering from long-term handicaps to

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[1] John Shaw & Edward Clay (1993) *World Food Aid*: p xi.

[2] Official Publications of the EC (1992) *From Single Market to European Union*: p 43.

growth, in particular low levels of human resource development and/or severe structural weakness."[3] Previously, LDCs were often defined as "less developed countries" and LLDCs as "least developed.") *The World Bank Development Report* (1996) estimates the poverty line (GNP per capita in weighted $US) at $380*w* in low-income countries including China and India, and at $360*w* for other low-income countries.[4]

MAFF: Ministry of Agriculture, Fisheries and Food (United Kingdom).

Metric/US measures: 1.016 metric tonnes/ US long ton. 0.454 kilograms = US lb. Metric tonne = 2.2046 US pounds.[5] 3.785 litres = US gallon. (0.454 kg./US lb.) Milk weighs ca. 1.03 kg./litre = 0.975 kg./US quart = 8.6 US pounds per gallon.

NFU: National Farmers Union (Great Britain).

NDDB: National Dairy Development Board, in India; later merged with IDC.

NTB: nontariff barriers, e.g. quotas or voluntary export restraints (VERs).

NGOs: non-governmental organisations; e.g. Christian Aid or Oxfam.

OF: Operation Flood, the world's largest dairy development project in India.

PL 480: Public Law 480, basis for formal US food aid operations since 1954.

Reciprocity: "symmetric rights and obligations of member states" in Bhagwati.[6]

*SAP*s: structural adjustment programmes, as mandated on debtor countries by the IMF.

SMP: skimmed milk powder; called nonfat dry milk powder (NDMP) in the US.

Tariffication: making explicit hitherto hidden forms of protection against farm imports.

Third World: generally referring to LDCs or the South, compared to the Western First World (aka ICs, DCs, the North) and former socialist Eastbloc or Second World.

Triangular operations: food bought in one LDC, sent as food aid to another.

USDA: United States Department of Agriculture.

VER: voluntary export restraint/restriction. A form of nontariff barrier.

WTO: World Trade Organisation; superseded most GATT roles after GATT-1994.

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[3] Shaw & Clay (1993) *World Food Aid*: p ix.

[4] *World Development Report: From Plan to Market* (1996) World Bank: pp 188-189. Similar thresholds: low- and middle-income economies/$1090*w* GNP per capita; upper-middle income/$4640 and high-income economies$23,420 and world average/$4470.

[5] *Webster's Ninth New Collegiate Dictionary* (1985).

[6] Jagdish Bhagwati (1988) *Protectionism*: p 35.

INTRODUCTION TO THIS THESIS

International dairy product aid and trade is a relatively recent phenomenon, and an examination of both activities reveals an interrelationship so close that at times it can be difficult to discern one from the other.

In its investigation of the intertwined activities of dairy aid and trade, this thesis moves from the general background of food aid and trade (which is dominated by cereals) in Chapters 1 and 2, to the case study of Indian dairy development in Chapters 3 and 4. There happens to be a greater wealth of statistics kept, and more research published in international grain trade than in dairy trade and aid, but similarities between the two commodity fields are compelling. Therefore, this thesis will sometimes refer to the grain trade, in order to illustrate international dairy activities whose patterns often follow those of grain.

Chapter 3 benefits from recent empirical evidence gleaned from the Agrostat·PC (FAO Rome, 1990 and 1994) database from the Food and Agriculture Organisation of the UN. Maps, charts and tables in this thesis show a turnaround in India's dairy picture after the advent of Operation Flood (OF) - the world's largest and longest-running dairy development programme, run ca. 1970-94 by the Government of India (GOI), in concert with the European Economic Community (EEC), the World Food Programme (WFP) and other institutions. Because so much debate on aid, trade and development can be illustrated by Operation Flood, concluding Chapters 4 and 5 review the discordant literature on OF and deems the programme a qualified success.

Food trade goes global

Just a few centuries ago most of the world's people ate food that was produced locally. The repeal of the British Corn laws in 1846 was a bellwether for waves of food trade that swept the world, allowing the diets of many people to incorporate cereals, and a wide range of other foods, from hundreds, if not thousands, of miles away. Other inducements to the international food trade included the laying of the Transatlantic cable in 1866, and opening of the Suez Canal in 1869.[7] The opening of the Panama Canal, in August 1914 as the European powers began WW-I[8], was a portent of the extension of US domination of trade in the western hemisphere to both hemispheres after WW-II, when the exhausted combatants in Europe and Asia ceded *de facto* world trade hegemony to the US. Farm production had geared up (along with production of arms matériel) in the US during the war, as part of wartime Lend-Lease (1941-1945) to the Allies, and helped bring an end to the Great Depression that had dogged the economy since 1929. Loath to disappoint US farmers by cutting production, the government soon authorised extended aid for European recovery in the Marshall Plan (ca. 1947~52), which helped Europe rebuild faster than even some optimists expected.[9]

Post-WW-II food aid shipments were primarily cereals, mostly wheat, but among the commodity mix of aid were dairy products. This dairy product aid was comprised mostly of milk powder, as well as forms of butter. WW-II era milk powder was a valued addition to the diets of those without access to fresh milk, but to the trained palette, the taste was "artificial", and the reconstituted product often was marred by floating clumps of undissolved milk powder. Improvements in fine-spraying techniques in transforming fresh fluid milk into dry milk powder were soon to improve product quality, consumer satisfaction, and expand the scope for international dairy product trade dramatically. Also of immense use were improvements in refrigeration, and the development of better-insulated ship, rail and truck containers to preserve dairy products from spoilage.

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[7] Dan Morgan (1979) *Merchants of Grain*.

[8] William R. Keylor (1984) *The Twentieth-Century World*: p 27.

[9] Perhaps the quick results achieved by US aid in the rebuilding of Europe led to unrealistically high expectations of what could be achieved by sending aid to countries outside Europe. Although much of the infrastructure and urban centres of Europe were damaged, sufficient skilled workers and managers survived with knowledge of how to rebuild modern systems - a crucial factor that was missing in some less developed countries targeted for development aid.

Huge yield increases in cereals, fodder and dairy production witnessed in the US during the 1950s and the 1960s seemed to presage a future of food bounty, not only for Americans, but also for those living in want around the world. It was thought they could benefit first from surplus food shipments, and second from adopting modern agricultural techniques mastered in the US and Canada. So food aid (mostly cereals, but significant amounts of milk powder until the early-1970s) continued to flow from North America to recipients around the globe. Plans to extend technical progress made in North America to Green and White Revolutions in poor countries around the world were set in motion.

But within a few decades, initial optimism met scepticism, then derision. Although some US clients in the Cold War, led by Japan, prospered under land reform and a lingering US influence, other countries (usually less crucial to Cold War strategy) had food aid and trade relationships with the West that seemed counterproductive. Instead of bounty, many faced scarcity. Meanwhile, the ideological conflict and military tension between the West and Communist countries confused the dialogue about poverty and development. In an effort to neutralise the Cold War strategy of the competing First and Second Worlds, Jawaharlal Nehru and others called for a non-aligned Third World movement at the Bandung Conference in 1955.

The writer of this thesis is encouraged by statistics on rising literacy and other quality-of-life indicators in developing countries, as well as the much ballyhooed "emerging economies". The trends reflect slow but undeniable progress in most countries. Nevertheless, it is equally undeniable that much of the world remains in poverty. (This has often resulted in calls for import substitution - if not outright autarky - in developing countries.) Whether the portion of people below the World Bank-defined poverty line ($380 in low-income countries including China and India; $360 in the group of other low-income countries[10]) is 25%, 15% or 8% is in dispute. But the nutritional requirements of too many of the world's people are unmet, and the detractors of food aid programmes blame a chronically harmful relationship between aid and trade.

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[10] *World Development Report* (1996) World Bank: pp 188-189. GNP per capita in weighted $US.

First do no harm

The practitioners of the international aid and trade regime often exacerbate ailments of countries they presume to improve, according to detractors. They metaphorically violated the oath of Hippocrates, particularly the injunction to do no harm. According to legend, Hippocrates, pledged

> I will prescribe regimen for the good of my patients according to my ability and my judgement and never do harm to anyone.[11]

When formal international food aid programmes were first constructed, after WW-II, it seemed so simple. Even children feel the simplicity, intuitively. They ask: *If people are hungry and we have plenty, why not just give it to them?* Yet few transactions, which on the surface seem so innocuous and above-board, have, as the decades pass, aroused as much criticism, hostility and deep-seated suspicion among both rich and poor countries as the intersticed mechanisms of international food aid and trade. Criticism of the post-WW-II international aid and trade network ranges from mild scepticism, to calls for liberalising reform, and demands for radical change.

Scepticism of the *status quo*

The milder doubters express puzzlement that despite the hundreds of millions of tonnes of cereals, vegetable oils and dairy products sold on concessionary terms - or donated as outright grants - to less developed countries (LDCs) since WW-II, many Third World food aid recipients remain further from nutritional self-sufficiency than before aid began.

Sceptics of the *status quo* sometimes call for large increases in aid according to the Club of Rome prescriptions of the 1970s or, conversely, a cessation of aid in line with the dissent on development aid of Peter Bauer.[12]

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[11] *Economist Survey* (March 19, 1994) "The future of medicine": p 17. Food aid practitioners might defend themselves in turn by echoing Hippocrates' defence against critics of his empirical methods: "Desperate diseases require desperate remedies."

[12] Peter T. Bauer (1971) *Dissent on Development: Studies and Debates in Development Economics*.

Calls for reform

In the middle position (generally the province of this thesis) critics charge that the system was unfairly managed by rich countries (ICs, alternatively DCs[13]) in North America and Europe, making LDCs serve as outlets for IC farm surpluses. At the same time, poor countries suffered economically from US - and especially EEC - protection against their food exports. The US occasionally chafed at EEC protection against cheaper food imports (e.g. chickens and cereals from the US), but generally accepted them because of the stability that EEC farm policy brought to Europe during the Cold War confrontation with the USSR.

As we have already discussed, US farmers (characterised by low-cost production, due to a wealth of arable land) benefited from the ready markets cultivated by Washington in commercial trade, concessionary sales or outright food aid after WW-II. Unlike US agriculture which was sending streams of cereals and lesser amounts of milk powder and other commodities around the world, Europe's agriculture had relatively little obvious effect upon developing countries until about the mid-1970s. It was then that the newly food-self-sufficient EEC "surplus disposal" programmes of its own were necessary. In Europe, (characterised by high-cost production, due to a scarcity of arable land, relative to the US) surpluses were made possible by generous price supports paid to farmers.[14] US policy makers accepted EEC farm subsidies and protection until the 1980s, when EEC-subsidised exports cut into world market share held by the US. Eventually, it was EEC-export-subsidisation more than anything else that persuaded the US to favour agricultural liberalisation in the international General Agreement on Tariffs and Trade negotiations known as the GATT.

In *Merchants of Grain* Dan Morgan explains that, while the US role in post-WW-II food trade reverberated (for better or worse) around the world, Europe's international presence was not overweening until later. Morgan says that, because Europe's post-

[13] ICs: Industrialised Countries with large service sectors becoming Information-technology Countries in our so-called post-industrial era. Alternatively, ICs are called DCs. *Explanation*: When it was recognised that many LDCs remained poor after significant industrialisation, some theorists began referring to rich countries (formerly ICs) as Developed Countries (DCs).

WW-II appetite for grain was so great until the early 1970s, subsidisation and protection of European farmers by the Common Agricultural Policy (CAP):

> did not substantially worsen the terms of trade for non-European suppliers.[15]

But Morgan notes that when agricultural production went into surplus, and Europe's "food mountains" grew in the late 1970s, the terms of trade shifted against non-European suppliers - a viewpoint shared by Kym Anderson and Rodney Tyers[16] in their detailed arguments for GATT reforms in farm trade. This was true for dairy products as well as cereals. CAP dairy subsidies resulted in surplus butter mountains and milk lakes that the Germans (prime contributors to it) collectively termed *der Butterberg*.[17] In fact, French and German contributions to EEC dairy surpluses were much greater than would have been the case without CAP subsidies.

Writing more than a decade after Morgan (and a year or two before signing of the Uruguay GATT accords on agriculture), Paul Kennedy wrote that agricultural lobbies in ICs still played a strong role in world trade:

> Although the percentage of the population engaged in agriculture is not large in developed countries - 3% in the United States, 4.8% in (West) Germany, 2.1% in Britain, 6.7% in France, 8% in Japan, 9.1% in Italy - farming lobbies remain enormously influential. [18]

Among opponents of the *status quo*, the Cairns Group of more than a dozen agricultural exporters (which fought EEC and US subsidies in the Uruguay round of the GATT negotiations) reflected Morgan's view. In a study by the University of Missouri of nearly 300 farms over the years 1985 to 1993, 41% of net income of average farm operators came from US government subsidies; 33% of net dairy farmers' income came from the same source.[19] Figures for comparable EEC subsidies were even higher. The Cairns countries, comprising ICs such as Argentina, Australia, New Zealand along with

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[14]In Europe, farm subsidies helped improve the rural economy, slow rural-to-urban migration - and shore up farmers' political support for the largely Christian-Democratic governments (in tune with US- and NATO-led Cold War strategy) that dominated post-WW-II politics for decades.

[15] Dan Morgan (1979) *Merchants of Grain*: p 185.

[16] Kym Anderson & Rodney Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*.

[17] Dan Morgan (1979): p 189.

[18] Paul Kennedy (1993) *Preparing for the Twenty-First Century*: p 75.

[19] University of Missouri (May 10, 1995) "Government pays 41% of net income" in *Hoard's Dairyman*: p 344. Jim Kennel, supervisor of the study said, "These are not giant corporate or mega farms. They are family farms and small commercial farms...with annual sales of $200,000."

several net food exporters from the Third World, argued that subsidies in the rich US and EEC unfairly attacked their natural comparative advantage in food production.

The Cairns Group decried EEC and US farm subidies in general and subsidising agricultural exports to the world market in particular, while protecting their domestic markets from cheaper imports from Cairns countries, etc. In the Uruguay Round of GATT, the Cairns Group demanded liberalisation of trade including dairying, which the US had caused to be exempted from GATT rules from the beginning in 1947.

Calls for radical change

At the other end of the range, detractors of the international food aid and trade regime such as Susan George[20], readily acknowledge that IC agricultural subsidies and other practises badly skew world agricultural trade. Because George's view was, at least until recently, shared by many others including policy makers in developing country governments, it bears lengthy discussion. This analysis identifies food and development aid as an intrinsic part of the systematic exploitation of poor countries by developed countries. George has claimed that since aid programmes burgeoned after WW-II:

> the relative and absolute numbers of hungry and destitute people have vastly increased.[21]

George is joined by Arturo Escobar[22] in demanding more radical measures than the reforms sought by the Cairns Group, and in charging that rich country farm subsidies are possible, at least in part, due to profits that IC-based MNCs expropriate unfairly from the Third World. Examples include sales of high-value-added, high-technology products (e.g., arms, machine tools and electronics), in what is clearly a seller's market. The positive net flow of debt repayments from poor to rich countries is also decried as unfair by George and Escobar. They cite as hideously ironic the fact that, at the height

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[20] Susan George (1977) *How the Other Half Dies-The Real Reasons for World Hunger*. Until the fall of the Berlin Wall, and consequent break-up of the USSR, perhaps most policy makers in developing countries resisted market-oriented policies. More recent acquiescence to market reforms (encouraged by progress in China after its agriculture was liberalised) should not mask poor countries' residual fears of interference in their economies by international capital.

[21] Susan George (1984) *Ill Fares the Land*: p 102.

[22] Arturo Escobar (1995) *Encountering Development: The Making and Unmaking of the Third World*. Escobar's critique might be described as neo-Marxian, or postmodern.

of the drought in the 1980s, the resources of governments in Sub-Saharan Africa were sapped by structural adjustment programmes (SAPs), mandated by the World Bank and the International Monetary Fund (IMF). The putative trade surpluses of many African countries were absorbed entirely by their debt repayments to rich countries and lending institutions. From the 1980s, a decade lost to drought and debt, through the year 2000, Africa was expected to suffer a net disinvestment of approximately $40 billion.

Given this exacerbation of poverty in poor countries in Africa and elsewhere, it smacks of reprehensible greed that the ICs, which have a pronounced lead in manufacture and marketing of high-value-added goods, should also seek to sew up the international trade in low-value-added commodities such as farm products. But, as Paul Kennedy notes, farmer groups in the US and elsewhere (whose farmgate prices in constant dollars have suffered a long-term decline), have pressured their governments to "discover and open up markets overseas."[23] Moreover, the US trade deficit with Japan - and newly-industrialising countries (NICs) like Korea, and lately, China - gives the US government strong economic incentives to market its agricultural produce abroad as profitably as possible.

That critiques of George, Escobar and the like deserve careful examination seems obvious, when even the proponents of multinational (or transnational) capitalism and *laissez-faire* trade admit that, at times (e.g. the 1973-74 US grain sale to the USSR) international grain cartels, and lobbyists have skewed the marketplace - generally tilting the advantage toward the industrialised countries, and heavily against the developing Third World.[24] Somewhat differently, William Greider[25] argues that uncontrolled movements of international capital can erode producer (or farmer and worker) interests, and even threaten the ability of rich country governments (not to mention poorer ones) to regulate their economies.

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[23] Paul Kennedy (1993) *Preparing for the Twenty-First Century*: p 317.

[24] Arturo Escobar, Dan Morgan, Susan George.

[25] William Greider (1997) *One World, Ready or Not: The Manic Logic of Global Capitalism*. Perhaps capital movements will be the object of reform in future GATT/WTO negotiations. Kennedy (1993) is also pessimistic in his analysis of the major roles of capital and MNC agribusiness in world agriculture.

Escobar sees a hubristic Western world-view behind many mistakes made in the post-WW-II "development discourse", and portrays the West's aid and development establishment as a means to induce Third World acceptance of First World rationalisations for their economic and cultural subservience. Escobar concurs with George that more than simple human error or (in a postmodern sense) an incomplete world-view contributed to the inequity of the international trading regime. They suspect the system is fixed to steadily expropriate the natural resources and productive capacity of the developing world, while it (LDCs) serves as a dumping ground for the food mountains resulting from Europe's CAP and similarly supported North American farm programs (e.g. the US Food Security Act of 1985). In the spirit of the moribund New International Economic Order (NIEO), this wing on the left believes that radical reform of the IMF, World Bank and other institutions is necessary to curb harm done by capitalist powers to small players in the international food trade.

A direct link might be traced between the harshest critics of the international food aid and trade regime such as Susan George and Arturo Escobar, the most vociferous critics of international dairy aid such as Shanti George[26] and Claude Alvarez[27], and numerous socialist Members of the European Parliament - all the way back to the world-view of V.I. Lenin. In a 1917 essay Lenin[28] claimed that, since by its inherent nature, capitalism must continually expand its markets - or die - it faced a crisis and critical turning point in the eighteenth and nineteenth centuries. Lenin wrote that the capitalist countries of Europe had saturated their own domestic markets - partly because the purchasing power of labour and the proletariat were limited or even frozen in the class system. Their markets had matured. Faced with mature domestic markets, capitalists had, according to Lenin, reached for the geographical solution.

In the context of international dairy aid and trade, Marxist or neo-Marxist critics have fixed on the activities of MNCs such as Carnation, Monsanto and Nestlé, in concert

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[26] Shanti George (1985) *Operation Flood*.

[27] Claude Alvarez, ed. (1985) *Another Revolution Fails*.

[28] V.I. Lenin (1917) "Imperialism, the Last Stage of Capitalism". Lenin's description roughly corresponds to the "price-squeeze" affecting rich country farmers, who found that they had to produce more for lower prices, but consequent over-supply in the marketplace further reduced their compensation in real dollars.

with the governments of the rich countries in which they are based, as seeking to coopt poor countries such as India into their international marketing plans. (Certainly Nestlé encountered criticism from Right, Left and mainstream critics for marketing its human milk-replacer in poor countries.) In this view, initial shipments of donated or concessionary dairy aid might, for example, be tendered to encourage India's acceptance of future sales from Europe. The worst case might be one in which India loses its dairy self-sufficiency (not just in baby milk-replacer and baby foods, but also in adult dairy intake), after abandoning attempts to improve its population's nutritional entitlements by developing its own dairy production, processing, distribution and marketing systems. The best case might be one in which India reverses that dismal scenario and emerges as one of the world's leading dairy producers, with a population that gradually enjoys greater access to nutritious dairy products. Fortunately, the latter scenario represents the results of Operation Flood, the case study for this thesis.

View of this thesis

That the massive transfer of surplus dairy products from Europe to India in the Operation Flood (OF) programme from the late 1960s to the 1990s was fraught with potential dangers to Indian dairy autonomy was properly pointed out by many critics. Even a leading proponent of food aid, Hans Singer acknowledges its two-sided potentiality:

> ...most reasonable people would however, agree that food aid, if improperly handled, can do more harm than good, and there are plenty of horror stories to testify to that. Yet equally, when properly handled, food aid can do a great deal of good and be a vital instrument of development - and there are plenty of success stories to testify to *that*.[29]

As will be discussed at length below, Martin Doornbos *et al*[30] found that while Operation Flood was not without success under certain criteria (e.g. fostering dairy cooperatives), early mistakes in pricing of dairy commodities available to large urban processors in India acted as disincentives to Indian dairy farmers before they were rectified. Doornbos concurred with many other critics that some claims made about OF (e.g. that it would result in significant welfare gains to women, children, lower castes and tribal groups in India) were either exaggerated or doomed to failure.

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[29] Hans Singer, *et al* (1987) *Food Aid: The Challenge and the Opportunity*.

[30] Martin Doornbos, Frank van Dorsten, Manoshi Mitra and Piet Terhal. (1990) *Dairy Aid and Development: India's Operation Flood*.

Observers with more limited (perhaps more realistic) expectations for a programme that was originally constructed to facilitate marketing and nation-wide distribution of Indian milk, are more ebullient in their praise. Relatively recent data from Agrostat/FAO (1990, 1994) that per capita consumption of milk and ghee increased during Operation Flood, while imports of EEC commodities declined, makes it very difficult to portray it as a horror story. Instead of serving as an instrument of European neo-colonialism, imported dairy products were "monetised" to finance much-needed infrastructure. In retrospect, it appears that Operation Flood helped increase India's food security during a period when many developing countries lost ground.

Increasingly, since the early 1980s (partly due to the free market influence of the Reagan administration in the US, and the Thatcher administration in the UK), aid practitioners have scrutinised their activities, identifying and ceasing counter-productive operations. Aid practitioners have also sought to quicken their response to emergencies (such as drought in Ethiopia or Somalia) by improving information gathering, while increasing their sensitivity to circumstances where food aid should be augmented by cash or technical aid.

Dairy aid as a Trojan Cow?

Today it is clear that in most cases, dairy aid programmes should be limited to circumstances where donations can be utilised by the recipient government *without posing long-term disincentives to indigenous farmers* - a danger that even long-time food aid advocates such as Hans Singer and John W. Mellor are well aware of.[31] However, an examination of Operation Flood, the case study for this thesis, reveals that instead of acting as what Shanti George scorned as a "Trojan Horse" inviting dependence on European imports, it helped enhance India's long-term dairy autonomy. When the programme began, there was milk rationing in India. Today, dairy products

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[31] John W. Mellor (1987) in Clay & Shaw *Poverty, Development and Food*.: pp 187-88. This is not to say that there are not (according to David Ricardo's theory of comparative advantage) many instances where reliance upon food imports is warranted. Britain led the way with repeal of the Corn Laws in 1846. Presently, Egypt has a high degree of food security despite (or because of) its reliance upon US cereals imports (Anne Thompson, 1985), but it may be able to improve its economy through earnings achieved by the release of labour from its farm sector to more remunerative work, just as Britain did.

are of better quality and more widely available, production has doubled and per capita consumption has increased by at least 20% for butter and ghee and around 50% for some other dairy products. Although a large portion of the Indian population remains in poverty, food security has been generally increased, and economic output is improving.

Tested by Hippocrates' maxim, it seems that in the aggregate, Operation Flood "did no harm", and it is reasonable to conclude that the programme has already brought significant welfare gains to India. As Peter J. Atkins concluded in a 1988 paper:

> This type of project, which seeks fundamentally to restructure whole subsystems of the rural economy, will take at least 20 or 30 years to reach its basic goals but, given the political will on the part of the Government of India and the state authorities, OF will prove a great boon to both urban consumers and rural producers.[32]

Obviously, the detractors of the present international food and dairy aid and trade regime are right to insist that world food systems should be audited continually for counterproductive food aid schemes, or the cartels, monopolies and protection that impede development in poor countries. Adam Smith wrote that a sort of benign capitalism was possible if governments guided "the invisible hand", but only if:

> every improved and civilised society...takes pains to prevent [oppression by]...the masters of mankind...[under their] vile maxim.... All for ourselves, and nothing for other people.[33]

Despite the dangers that rich capitalist countries can subvert poor country agriculture to their own ends, Operation Flood shows that this need not be the case. Furthermore, this thesis finds evidence that some reforms of potential benefit to developing countries have already been made, and can be extended under the aegis of the WTO, which began in the GATT process.

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[32] Peter J. Atkins (August, 1988) "Rejoinder: India's dairy development and Operation Flood" in *Food Policy* 13: pp 305-312. Also in *Indian Dairyman*, 40: 9: pp 515-523.

[33] Adam Smith quoted by Noam Chomsky (March 29, 1993) "Notes on NAFTA: The Masters of Mankind" in *The Nation*: pp 412-416.

CHAPTER 1: EXPANSION OF INTERNATIONAL FOOD TRADE, DAIRY TRADE & DEVELOPMENT PROGRAMMES FROM MERCANTILISM TO GATT/WTO-1994

Introduction

This chapter traces the rise of agricultural trade in the last few centuries to the 1990s. Brief reference is made to Adam Smith, David Ricardo, Thomas Malthus, Karl Marx and other voices still heard in debate on economics, population and world trade. Particular attention is paid to the post-WW-II period of the Cold War, when resistance to ideological interference from the West and the Eastbloc resulted in Jawaharlal Nehru's declaration of a non-aligned "Third World" in 1955. Mainstream Western efforts, epitomised by W.W. Rostow's "take-off" theory, often failed to achieve their goals. Food and dairy aid programmes at times appeared counterproductive. Criticism of aid and development programmes from, e.g. Peter Bauer on the Right, and Susan George and Arturo Escobar on the Left, is examined.

Chapter 1 also describes how the agricultural "protectionism" which Jagdish Bhagwati says was originally built into GATT-1947 by the US, was addressed in the Uruguay Round of world trade negotiations culminating in the controversial GATT-1994 accords. In the Uruguay Round, agriculture and dairy trade were brought under the aegis of the GATT for the first time. A discussion of Kym Anderson and Rodney Tyers' work suggests that developing country exporters which lost world market share from 1961 to 1986, could profit from GATT-1994 removal of rich country agricultural subsidies, and other liberalisations of international food trade. A synopsis of key provisions of the GATT-1994 agreement, and creation of the World Trade Organisation (WTO), is followed by some possible best case/worst case scenarios for rich and poor nations.

Historical Background

The benefits of free trade are not universally recognised. Trade often takes lower precedence to other values of ethnic groups or countries. History is replete with examples of groups valuing ideological purity and self-reliance over unrestricted commerce, such as the Puritans who settled New England. Until Britain repealed the Corn Laws in 1846, government policy favoured agricultural self-sufficiency over free trade. Although the Bretton Woods conference in 1944 inaugurated the post-WW-II era of expanded international trade, countries including Albania, China, India and Burma (*aka* Myanmar) have chosen policies ranging from "import substitution" to virtual autarky. Jagdish Bhagwati writes:

> The virtues of division of labour and exchange, noted even in Plato's Republic, had been lost to oblivion. Mercantilism and its legitimation of autarkic protective policies seemed to be only common sense, reminding one that common sense is what makes a person assert that the earth is flat, for that is how it appears to the naked eye. [1]

On the international (and even regionally intranational) level, free trade is often opposed on the basis that it harms domestic farmers or producers - even the nation (or region) as a whole. Today, farm lobbyists around the world frequently insist that their respective nation's power and wealth depends (at least in part) upon its own thriving agricultural sector. (Such an assertion might be closer to the truth if free trade opponents argued that the political future of the governing leadership depended on the goodwill of their agricultural constituency.) Writing recently in a survey of agriculture in *The Economist*, a publication that was instrumental in repeal of the English Corn Laws in 1846, Edward Carr wrote:

> Every age has found a pretext to protect its farmers. In the 19th century that pretext was unfair competition from cheap American and Australian wheat. In the 1930s it was farm poverty. After the second world war it was food security. In the 1960s it became preservation of the rural character. The farm lobby is quite capable of finding something new for the 1990s.[2]

Mercantilism

In Europe, after the decay of feudalism (which was weakened by the formation of city states and the other manifestations of the Enlightenment), the preponderant "mercantilist" philosophy of new nation states such as France and England included the

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[1] Jagdish Bhagwati (1988) *Protectionism*: p 25.

tenet that self-sufficiency in food (as well as iron, textiles, etc.) was an important pillar of national power.[3] In the starvation-prone time of Thomas Malthus (1766-1834), when food production limited population - and hence the numbers of well-fed soldiers that could be fielded - this argument was intuitively apparent.

In the "zero sum" economics of the age of "mercantilism", one country's loss was another's gain; when English pirate-adventurer Francis Drake seized a Spanish merchant ship, Spain's loss was England's gain. It seemed one country could be rich only if another were poor. This was partly due to a widespread confusion, or misapprehension, equating *specie* (usually gold or silver coins) with wealth. As Paul Kennedy notes, "lessening the outflow of specie"[4] by relying upon domestic supplies of "textiles, iron, grain", and denying foreign competitors profitable trade relationships seemed nearly as important as accumulating one's own wealth. **(See Table 6)**

The Wealth of Nations

The name forever to be associated with the first great erosion of what Kennedy called "the mercantilist, protectionist state" is Adam Smith.[5] In *The Wealth of Nations* (1776) Smith argued that the "invisible hand" of individual self-interest was the best guarantor of greater aggregate local, regional or national wealth. Smith argued that wage and price controls, imposed domestically (i.e. intranationally) by national governments, often hindered productivity, and hence national wealth. Acceptance of Smith's free trade philosophy was a precursor to the dismantling of centrally planned economies (CPE) of the COMECON countries in central Europe, and around the world, in the 1980s and 1990s.[6]

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[2] Edward Carr (December 12, 1992) "Grotesque: a survey of agriculture; the new Corn Laws" in *The Economist* survey pp16, 1-18.

[3] Paul Kennedy (1993) *Preparing for the Twenty-First Century*: p124.

[4] Paul Kennedy (1993): p.124.

[5] Paul Kennedy (1993): p. 125.

[6] It should be noted that Smith did not advocate absolute *laissez-faire* economics, but insisted on government limitations upon monopolies as well as individual accumulation of wealth. Aside from concerns that monopolistic conditions tend to exacerbate income inequalities in the population, Smith believed monopolies also are likely to lead to inefficiencies in production, as a result of the loss of competition. A botanist might use this metaphor: the climax crop of *laissez-faire* economics is monopoly - stifling to new growth until a cleansing forest fire comes along.

However, it is a long way from an *intranational* policy of liberalised trade within territory controlled by the British Crown, such as the former Empire, to a policy of tariff-free trade *internationally* (both of which Smith advocated). While the Crown enjoyed the gains from trade with its colonies or less powerful countries, it was loath to see its rivals such as Spain or France profit from a similar free trading relationship with itself. Additionally, the landed aristocracy of the British Isles, which depended upon rents from tenant farmers for its income lobbied the Crown to retain protective tariffs on food imports from other countries that would compete with domestic agricultural production, lowering their prices and rents.

J.D. Nicholson wrote that, although consumers had suffered from a dearth of imports from 1765[7], Britain did not become a net food importer until 1788. Nicholson asserts that even Adam Smith, who noted this harm to consumers, had missed an important *raison d' être* of the protective tariffs called the Corn Laws: to bolster the power of the Crown.[8] Mercantilist policy protected the Crown through the ability, in emergencies, to commandeer British merchant ships into status as temporary warships. Another abiding attraction of a mercantilist, managed trade policy (in an era long before the imposition of income taxes), was the fiscal power to raise monies through the granting of import and export licences, and levying tariffs on exports and imports.

When the English Crown finally concluded that more revenue could be raised by liberalised policies (i.e. by levying tax on *freely* traded goods, instead of selling licences to conduct closely managed trade), a policy of free trade became politically practicable. The death knell of mercantilism as a national strategy came when enough policy makers agreed with industrialists (and according to the interpretation of the writings of Ricardo, and later Mill), that free trade would enhance national power. Jagdish Bhagwati points out that a free-trading nation would profit:

> whether its trading partners were free-traders or protectionists. *Unilateral* free trade emerged as the prescription from this corpus of thought.[9]

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[7] J.S. Nicholson (1904) *The History of the English Corn Laws*.
[8] J.S. Nicholson (1904): p 122.
[9] Jagdish Bhagwati (1988) *Protectionism*: p 24.

Acceptance of free trade represented a landmark defeat for Britain's "agrarian protectionists"[10] in the mid-19th century, according to Hobsbawm. Assuredly, free trade has been a troubling prospect for high-cost producers in all countries, from the age of mercantilism to the present, liberalised post-GATT world trading system.

Industry versus Agriculture

It was the rise of industry that prompted a paradigm shift away from "zero sum" economics. Britain, whose power was enhanced by its leading role in the Industrial Revolution (making it well-placed to profit from exports to the continent, during the time of revolution and Napoleon in France[11]), experienced structural shifts that were later mimicked by nations world-wide.

As Britain's textile, coal, steel, armament, shipping and rail industries raised national output, and manufactures and industry became more important to the national tax base, the relative weight of agricultural interests declined. (Perhaps it is politics, not economics, that truly is a "zero sum" competition.) Although Thomas Malthus' predictions of apocalyptic famine were later disproved, his assertion that humanity is limited by the food available to keep it alive was self-evident, as well as tautological. Malthus did not anticipate increased factorial productivity in agriculture, which due to technological change, is why his dismal logic of the arithmetical growth of the food supply lagging behind the geometric growth of humanity was faulty.

In our own time, increased factorial productivity wrought by the Green Revolution has helped food supply keep pace with demand, as world population doubled in the period 1950-1988.[12] Yet, Malthus' dire warnings linger on. Paul Kennedy, whose book *Preparing for the Twenty-First Century*[13] often refers to Malthus, remains pessimistic. Citing the research of Lester Brown and the World Watch Institute, Kennedy writes that droughts of the 1980s, along with an estimated 500 million "seriously undernourished" people (a wedge of world population believed by Brown and Kennedy to be rising)

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[10] E.J. Hobsbawm (1962) *The Age of Revolution: 1789-1848*: p 359.

[11] Paul Kennedy (1987) *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000*: pp 126-139.

[12] *Economist* (June 10, 1995) "Will the world starve?": pp 63-64.

[13] Paul Kennedy (1993) *Preparing for the Twenty-First Century*.

could be neo-Malthusian harbingers of a new era when population outstrips food production.[14] Pessimists claimed that in the early 1990s, world grain production was rising at only 15 million metric tonnes annually, when 28 million MT were needed to match world population growth. Yet better harvests in the mid-1990s reversed this trend and began restoring depleted stocks of grain, etc.

In the Industrial Revolution witnessed by Malthus in the late-eighteenth and early nineteenth centuries, industry competed with agriculture for scarce workers. Since industrial wages must, at a minimum, be sufficient to feed and clothe workers, clever industrialists realised that, if cheaper sustenance were available to workers, the cost of "a living wage" could stabilise or even fall, reducing overhead. According to E.J. Hobsbawm manufacturers believed food prices:

> were kept artificially high by the monopoly of the landed interest, made even worse by...the Corn Laws.[15]

So in their own interests, industrialists and the Anti-Corn-Law League fostered a mass campaign[16] to abolish the Corn Laws in Britain, and permit the import of cheaper grain from North America and elsewhere. This was resisted - to no avail - by the landed aristocracy, which argued that relying on food imports would subject their island nation to embargo and siege by foreign navies. But the ability of the British navy to defend its sea lanes was too well known, and the political influence of industry had so far exceeded that of agriculture, that the arguments of the agricultural gentry were to no avail. Food shortages, indeed famine, were never entirely out of the picture. As late as the year 1842, there were reports of unemployed workers dying of starvation on the streets of Manchester.[17]

Typical of most of history's so-called famines, starvation in Manchester resulted more from structural defects in food distribution (or limited "entitlements"[18] to food, in the vocabulary of Amartya Sen) than food shortages. At any rate, the horror fuelled public support for reductions of tariffs on food imports. By 1846, most of the listed Corn

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[14] Lester R. Brown (1990) *State of the World*: pp 65-67.
[15] E.J. Hobsbawm (1962) *The Age of Revolution: 1789-1848*: pp 60-61.
[16] E.J. Hobsbawm (1962): p. 157.
[17] Horace White (1888) in Frederick Bastiat's *Sophisms of Protection*: page ix.
[18] Jean Drèze and Amartya Sen, eds. (1990) *The Political Economy of Hunger - Volume 1 - Entitlement and Well-Being*.

Laws were rescinded. As capital-heavy Britain turned from textiles to iron, steel and railways, repeal of the Corn Laws freed up labour from the agricultural sector.[19]

Crucial to this structural shift was a 9% drop in food prices between 1850 and 1869. Further drops in real food prices after 1882, due to cheaper freight and efficient foreign producers[20], convinced many remaining doubters of the advantages of free trade. Domestic farmers responded to foreign competition by rationalisations (e.g. drainage of marshes) that increased farm productivity in Britain in the 1850s and 1860s. Because the influx of foreign grain forced down domestic farmgate prices, some British farmers switched production from cereals to higher-value-added (HVA) products like milk and cheese, to supplement the improved diets of industrial workers.

Free trade policies were part of a "virtuous circle": the increased profits on sale of British manufactures (cheaper to produce, since workers' living wage was stabilised or even lowered in "real terms") on world markets provided a richer tax base. Taxes funded the navy, which in turn protected the commercial sea routes in which flowed the life blood of the British Empire.

Comparative Advantage

The British refined a principle earlier recognised by the Dutch: in the long run, military power is based on commercial power, not vice-versa.[21] The British embraced free trade with perhaps more fervour than the Dutch, because so many were convinced by the theory of "comparative advantage" advanced by David Ricardo in the early 19th century.

By comparative advantage, Ricardo's proofs showed that even if England were *absolutely* more efficient than Spain in all types of production, it would still benefit from free trade.[22] For example, England should trade its cheaper linen for Spanish corn (which Spaniards were *comparatively* better at producing than linen). In a leap from the "zero-sum" economics of mercantilism, policy makers now agreed that both countries would be wealthier than they were before forsaking autarky, by adopting

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[19] E.J. Hobsbawm (1962) *The Age of Revolution: 1789-1848*: pp. 61-67.
[20] J.S. Nicholson (1904) *History of the English Corn Laws*: p 157.
[21] Paul Kennedy (1987) *Rise and fall of Great Powers*.

specialisation of labour and engaging in international trade. Mathematical proofs of comparative advantage are simple and convincing. According to Paul Samuelson:

> the theory of comparative advantage is a closely reasoned doctrine which, when properly stated, is unassailable. With it we can identify gross fallacies in the political propaganda for protective tariffs aimed at limiting imports. With it we can identify the germs of truth that sometimes pop up in the heated claims for tariff protection.[23]

Protection of Infant and Strategic Industries; Farm Protection

Of course, the real world is more complex than Ricardo's proof, and at different times, in different countries, the arguments continue over whether or not to protect sectors of an economy by taxing imports, or to adopt less restricted policies for international trade. Such disparate industries as steel, consumer electronics, military production, agriculture and baby formula frequently entertain (to a surprising degree) similar arguments both for the removal of protection from foreign competition, and arguments for the removal of protection.

It is difficult for any government to impose unpopular policies (including free trade) indefinitely, if the governed remain unaware of gains from those policies. Governments are routinely lobbied by domestic interest groups for subsidies, or protection from foreign competition. Even proponents of comparative advantage and free trade sometimes excuse tariffs on competing imports, to protect infant industries. Economists including John Stuart Mill and Jagdish Bhagwati have argued that indeed there are instances when temporary protection of infant industries from foreign competition is justified[24] if returns to society outweigh the costs of protection *in the long run.*

This rationale was offered for India's infant steel industry which benefited from direct government subsidies and tariffs on imports for decades after independence. It also guided Indian policy makers in efforts to protect domestic production of skimmed milk powder, baby food and other dairy products that had been supplied by low-cost foreign producers such as Glaxo and Nestlé.[25] Although these efforts (later subsumed under the Operation Flood dairy development programme, ca. 1970-94) involved heavy investments and the use of dairy aid from Europe and the World Bank, they were partly

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[22] Paul Samuelson (1967) *Economics*: p 649.
[23] Paul Samuelson (1967) *Economics*: p 646.
[24] Jagdish Bhagwati (1988) *Protectionism*: p 25.

motivated out of a desire to save foreign exchange. Indeed, after 1976, India virtually stopped commercial imports of milk powder, saving millions of rupees on the debit side of its balance of payments accounts.[26] Indian dairying will be much discussed below.

A European instance of a staunch defence of its farm sector is that of Ireland. The Irish dairy industry played a more strategic role in that country's economy than was true in more industrialised EC countries. In the early 1980s, over a decade after Eire entered the Common Market in 1973, the European Commission planned mandatory milk quotas to cap the burgeoning butter mountain, milk lake and beef stores. But Eire saw this as a significant threat to its welfare, and negotiated fiercely. Margaret Thatcher herself admired the Irish government's vigorous defence of this "strategic" national interest.[27]

In the end, Brussels made Irish dairy farmers less subject to cutbacks than its European partners. Half a decade after the introduction in 1984 of the EC milk quotas, statistics reflected Eire's defence of its agricultural sector: agriculture still accounted for 12% of Ireland's GDP - a portion exceeded only by Greece (13.2%) within the EC-12. Moreover, 68% of Ireland was in permanent pasture, 14.4% of its labour force in agriculture (in the EC only Portugal with 17.5%, and Greece with 25.5%, had more) and food comprised about 32.5% of exports. In fact, some room for expansion was allowed Irish dairymen after 1983-84, whilst those in other countries, notably France and Germany, had to contract. Nevertheless early-1980s imposition of milk quotas and cuts in guaranteed beef support did not totally melt the butter mountain. As late as 1991 (eight years after imposition of milk quotas and cuts in beef support) EC dairy surpluses exceeded 500,000 tonnes, while an almost record 700,000 tonnes of beef was in storage.[28]

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[25] M.V. Kamath (1989) *Management Kurien Style: The Story of the White Revolution*.

[26] It is the viewpoint of this thesis that while India's steel industry probably deserved early protection, that relatively more exposure to foreign competition would have been beneficial. At any rate, economic liberalisation of the Indian economy since 1992 is exposing most sectors to more protection.

[27] Hugo Young (1989) *One of Us: A Biography of Margaret Thatcher*.

[28] European Commission Statistics (January 26, 1991) in *The Economist*: p 27.

More significant CAP reforms awaited the knife wielded by EC agricultural commissioner Ray MacSharry in 1992. From its beginning, the Common Agricultural Policy (CAP) was a compromise between the industrial power of Germany, and a more rural oriented France - which Germany needed as a market for its goods, as well as a partner with which to enhance its prestige after the condemnation it received after WW-II. The peasant culture remained so strong in France that Henry W. Ehrmann remarked:

> In a sense, France never repealed its Corn Laws. [29]

John T.S. Keeler wrote that post-WW-II French agricultural reforms were fashioned according to "neo-corporatist" policy, which in turn influenced the design of the CAP.[30] Thus, until 1992, the CAP little discriminated between rich and poor farmers, but subsidised them on a simple *pro rata* system according to acreage or stock numbers. This explains why the CAP produced such prodigious food mountains, and why EEC commissioners resorted to export subsidies, surplus disposal - and dairy aid programmes involving India and other countries to clear its expensive storehouses.

Calculated thus, a rate guaranteeing survival of small-holders entailed very large incomes for large farms. Frances's neo-corporatist philosophy envisioned medium sized family farms - a compromise between unviable small-holding of the peasant past and gigantic agri-businesses in the US, which were viewed with so much apprehension by French farmers.[31] However, various factors inhibited rationalisation, keeping nearly a million holdings under the 50 acres considered economically viable. Needless to say, such smallholdings drained an alarming portion of EC farm expenditure. In fact, at its peak the EC farm budget accounted for an untenable 70% of Community spending, with milk programmes accounting for 30% of that.[32]

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[29] Henry W. Erhrmann (1983) *Politics in France*: p 29.

[30] John T.S. Keeler (1981) "The Corporatist Dynamic of Agricultural Modernization in the Fifth Republic": p. 277. Article in *The Fifth Republic at Twenty* (1981) Wm. G. Andrews & Stanley Hoffmann, eds. A later book by Keeler explores French post-WW-II agricultural neo-corporatism in detail.

[31] John T.S. Keeler (1981) in Andrews & Hoffmann: pp 225-277. Keeler studied under Stanley Hoffmann. In 1987-88, Keeler kindly supervised my (BA) senior thesis on "Political Economy of the EC" at the University of Washington in Seattle.

[32] B.A. Scholten (February 10, 1989) "Milk quotas help melt Europe's Butter Mountain" in *Hoard's Dairyman*: pp 91, 121.

In a major break with original CAP policy, EC farm commissioner Ray MacSharry "differentiated" between rich and poor farmers in eligibility for income supports. The other chief point of MacSharry's 1992 CAP reform was that for the first time CAP income subsidies were "decoupled" from farm production - another break with past policy.[33] Clearly, Europe's agriculture could be described as a "mature industry", ripe for the removal of subsidies, as long as harmful structural or social dislocations could be avoided - as they were in the case of Eire.

Deciding if government protection of industries (whether they are portrayed as "infant" or "strategic" industries) is justified is difficult for economists, but even more so for politicians, who are vulnerable to lobbying by special interest groups. As mentioned above, the government of India, a continent away from Europe, imposed protection against commercial imports of dairy products such as baby food and milk powder (by more than one definition an infant industry), after domestic suppliers began competing with Glaxo, Nestlé and other low-cost foreign producers.[34] Some economists would argue that there were indeed more potential gains from protection of India's dairy industry than its steel industry on the grounds that the demand for milk powder, baby food and sweets had a steady domestic market, making it less cyclical than steel; that production of dairy products was likely to improve India's international trade situation; and dairy processing was less capital-intensive than steel. In fact, these were some of the reasons motivating dairy development in India. Although its White Revolution was criticised for its emphasis on capital investment in processing facilities and transport infrastructure, the heavy investment in dairying was probably far outweighed by that in steel - an industry less likely to absorb India's surfeit of surplus labour.

Aborted LDC "Takeoffs" compared to the Marshall Plan

After WW-II dozens of former colonies gained national independence and assumed their own macroeconomic planning. Many Third World countries tried a variety of strategies to reach the stage of development that, in a 1956 article Walt W. Rostow

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[33] B.A. Scholten (October 10, 1991) "Trade talks threaten European farmers, too" *Hoard's*: p 762.
[34] M.V. Kamath (1989) *Management Kurien-Style: The Story of the White Revolution*: p 126.

coined "The Take-Off into Self-Sustained Growth."[35] Briefly, Rostow termed his five stages of growth:

> traditional society, preconditions, takeoff, drive to technological maturity, age of mass consumption. [36]

Rostow's takeoff theory found wide acceptance among rich, industrialised country (IC) interests concerned with poor, less developed country (LDC) development during the Cold War. Rostow's takeoff theory has also been blamed (unfairly or not) by critics such as Peter Bauer, for waste and failures of IC aid to mitigate LDC development problems. Even before Rostow was prominent, many LDCs including India chose to adopt USSR-style centrally planned economies (CPEs). Emphasis on heavy industry, it was hoped, would help their countries leap-frog from what Rostow termed "traditional society [over the] preconditions" for takeoff into self-sustaining development.[37]

Michael P. Todaro wrote that the main obstacle to, or constraint on development was (in Rostow's theory) the relatively low level of new capital formation in most poor countries. But if a country wanted to grow:

> then it could seek to fill this "savings gap" ...either through foreign aid or private foreign investment.[38]

Unfortunately, this strategy too often met with disappointment. Planners were correct to note a positive correlation between rising investment and rising output. This was seen in the examples of the Soviet Union after 1917, Germany in the 1930s, and Europe during the Marshall Plan, 1948-52.[39]

What planners had ignored was the crucial fact that, prior to these periods of massive investment and succeeding growth, large portions of Germany, Europe in general, and parts of the USSR had already experienced post-takeoff stages of "technological maturity", characterised by "modern attitudes and motivations, as well as modern technologies"; significant portions of these industrialised countries had even entered the

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[35] W.W. Rostow (1990) *Theorists of Economic Growth from David Hume to the Present* : pp 432, 428-441.

[36] W.W. Rostow (1990): p 433.

[37] W.W. Rostow (1990): p 433.

[38] Michael P. Todaro (1985) *Economic Development in the Third World*: p 66.

[39] J.P. Cole (1979) *Geography of World Affairs*: p 174. Europe received about $14.5 billion under the Marshal Plan. Contrary to myth, Britain received more Marshall funds than did Germany.

"age of mass consumption" (i.e. Rostow's fifth stage, marked by consumer durables such as motorbikes and family automobiles.[40]

Yet more auspicious for their post-WW-II recovery, Germany, most of Europe and much of the USSR already had important networks of physical capital, in the form of harbours, railroads and other transport and communications infrastructure. And crucially, European labour had already entered one of the post-takeoff stages of growth (marked by modern education and attitudes toward work, e.g. punctuality) which Rostow called "the drive to technological maturity".[41] Thus, they could convert investment into output more efficiently than poorer "traditional" societies, marked by low literacy and a dearth of scientists, engineers and entrepreneurs.

This is not to say that Britain, for example, stymied all economic development in its colonies. Bauer points out that while Marx accused the metropolitan countries of plundering their colonies, he also regarded them as a progressive force of modernisation.[42] Some economists from the Third World [43] acknowledge that some benefits did accrue from the age of empire. These included development of transport, communications and services, as well as investment in textile and other industries.
In contrast to progress made in the colonial period, there were of course many instances of imperial exploitation resulting in technological stagnation in colonies. Examples may have included the relocation, from India to Britain, of the manufacture of high-value-added textiles.[44]

At any rate, while components of modern industrial economies were operating in and around trading cities in India (e.g. Bombay, Calcutta, Delhi, and Madras - nodes pertinent to this thesis), India *in toto* had by no means been modernised as thoroughly as the European areas that benefited so quickly from Marshall Plan aid.

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[40] W.W. Rostow (1990) *Theorists of Economic Growth*: p 432.
[41] W.W. Rostow (1990): p 432.
[42] P.T. Bauer (1971) *Dissent on Development*: p 164.
[43] Dr. Mahmoud Khan (1988): Personal communication during development economics course at University of Washington, Seattle.
[44] Relocation of HVA textiles from colonies to the metropole has been a hotly disputed debate, in which the conclusions of the combatants often fall in line with their ideological stance.

P.T. Bauer's dissent on Harrod-Domar and Rostow's "take-off"models

Many underdeveloped Third World countries, aspiring to economic takeoff and impressed by the regeneration of Europe during the Marshal Plan, were influenced by variants of the Harrod-Domar growth model.[45] Briefly put, the H-D model assumes a positive correlation between increases of net investment and GDP growth (according to an economy's underlying capital/output ratio). Peter Bauer attacked the limitations of the Harrod-Domar model, along with Rostow's stages-of-development theory, under the heading "Two Unsuccessful Approaches" in his 1971 book[46] *Dissent on Development*. Bauer pointed out that Harrod and Domar were concerned with "advanced industrial societies", and their models being "largely Keynesian in their main aims and assumptions", were inappropriate for underdeveloped countries. Bauer wrote that an overemphasis on capital accumulation contributed to the failure of development policies, and he castigated schemes that raised capital through unnecessary "compulsory saving", unduly restricting consumer spending and domestic markets. Bauer scorned "large-scale foreign aid" (i.e. grants or soft loans) that was often wasted by LDCs:

> [without the] recognition that expenditure does not become productive simply because it is termed investment.[47]

In a 1969 essay, Bauer attacked what he called the "spurious consensus" "of contemporary development economists", whose main tenets he depicted as "invalid" and "not even generally accepted." These tenets included the supposition that through "historical accident" and "colonial exploitation", it is "a vicious circle" of "extreme poverty" that blocks "the capital formation required for raising income." Bauer said planners were wrong to assume that post-colonial development hinged on:

> comprehensive central planning...compulsory saving...large-scale foreign aid. [48]

By contrast, Bauer thought that genuinely productive development projects could attract investment by domestic or foreign commercial banks - bypassing the "aid trap" completely. Although the amounts of monies and materiél comprising aid programmes seemed large, they seldom amounted to more than 1% of the GNP of the economies

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[45] Michael P. Todaro (1985) *Economic Development in the Third World*: p 64-66.
[46] P.T. Bauer (1971) *Dissent on Development*: p 295.
[47] P.T. Bauer (1971): pp 309, 295.
[48] P.T. Bauer (1971): pp 308, 309, 306-342.

they were supposed to improve. Thus, said Bauer, what in reality were relatively small amounts, often had less potential to improve poor countries than to destabilise their economies when inappropriately disbursed. According to Bauer, it was generally better to rely upon commercial capital formation and investment. In so doing, Bauer invoked even the name of Karl Marx in his synopsis of the gap between neoclassical economists and the aforementioned "spurious consensus":

> classical writers, including Adam Smith and Marx, closely related capital accumulation as an engine of development to...particular groups, organisations and classes, such as traders, governments and the bourgeoisie, and to social attitudes, relationships and institutions, and to changes in these. Some of the most influential growth models abstract these forces, and apparently treat long-term progress as dependent on capital expenditure alone; and this abstraction differentiates this modern approach from that of the classical writers. [49]

The above passage is important to our later discussion of contemporary dairy aid. It informs our analysis of attempts to ensure that such capital (in the form of commodity dairy aid and loans to India) was deployed appropriately by farmer cooperatives to raise the country's aggregate dairy output, and avoided either direct or indirect taxes that would increase dairy production costs. So poles-apart was Bauer from Rostow's take-off theory that Rostow once remarked:

> If Professor Bauer did not exist, it would have been useful to invent him...[50]

Certainly Bauer dissented on the received wisdom that all societies are limited to the five step programme choreographed by Rostow. Bauer suggested that when its formulations were not tautological, they were "so vague and open-ended as to be unserviceable."[51] He derided Rostow and similar development theorists for ignoring the anthropological uniqueness of societies (one point at least, on which Bauer and Arturo Escobar[52] could concur), the unpredictability of historical forces (e.g. technical innovation) and other factors more important to LDC development than external aid flows. The difficulty of separating the causes of growth from mere co-variants helps explain the seemingly endless, often politicised debate on development in the Third World. As hinted above, one side of this debate was epitomised by Bauer (on the Right) claiming LDCs are largely unable to absorb massive external investment flows.

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[49] P.T. Bauer (1971) *Dissent on Development*: p 295.
[50] W.W. Rostow (Nov/Dec 1982) in *Transaction/Society*: pp 88-89. Noted in *Theorists*, 1990.
[51] P.T. Bauer (1971): p 296.

Bauer acted as a Right wing gadfly to Rostow, a mainstream[53] establishment figure in the Democratic administration of President Lyndon Baines Johnson in the US (the world's leading aid donor) who claimed LDC development could benefit from large aid flows from ICs.

For the purposes of this discussion, we shall refer to the Bauer and Rostow camps. Of course, other camps took part in the development debate - notably before the end of the Cold War, when the Uruguay GATT trade negotiations finally superseded nuclear arms limitation talks on the world stage. To the Left of Rostow were "world systems" theorists such as Immanuel Wallerstein, ideologically close to Susan George and Arturo Escobar[54], who critiqued global food aid and development schemes generally, and Shanti George[55] who critiqued Indian dairy development specifically. Todaro cites additional views to the Left of Rostow as including "the neo-Marxist school - Baran, Sweezy, and Magdoff".[56] Not to be forgotten were official Communist Party theorists in the USSR and China - who fuelled propaganda that Western capitalism and neo-colonialism were the principal obstacles to LDC development, while ignoring the flaws in their own centrally-planned economies.

To varying degrees, critics on the far Left viewed the Rostow/World Bank nexus (which on the political spectrum was nominally closer to them than the Bauer camp on the Right) as being too preoccupied with Cold War strategy to be effective promoters of Third World development - if not actually inimical to it. Rostow conceded that:

> ...demonstrating that underdeveloped nations - now the main focus of Communist hopes - can move successfully through the preconditions into a well-established take-off...resisting the...temptations of Communism...is I believe, the most important single item on the Western agenda.[57]

Whatever the efficacy of Rostow's stages-of-growth theory for LDCs, it so profoundly influenced Western Cold War policy, that it is understandable why Bauer termed it a

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[52] Arturo Escobar (1995) *Encountering Development: The Making and Unmaking of the Third World*.

[53] Although characterised as a mainstream figure here, W.W. Rostow was a focus of far-Right attacks in the US, painting him as part of the Left-oriented political establishment dominating the US government and the UN. This influential wing demanded US withdrawal from the UN and cessation of foreign aid.

[54] Arturo Escobar (1995) *Encountering Development*.

[55] Shanti George (1985) *Operation Flood*. George's critique will be discussed further in later chapters.

[56] Michael P. Todaro (1985) *Development in the Third World*: p 94-99.

[57] W.W. Rostow (1990) *Theorists on Economic Growth*: p 439

"spurious consensus." Their debate on investment echoes the proverbial question: *what came first - the chicken or the egg?* Both Bauer and Rostow camps identified a concomitant surge in investment, as economies experience the preconditions for "takeoff". But: *what came first - the investment or the growth?* Plainly, Bauer (described as an iconoclast by many, and less benignly by Club of Rome adherents) believes that historical accident and technical innovation, such as made possible the rubber industry and consequent economic development in colonial Malaysia[58], are stronger determinants of long-term material growth than international development strategies (i.e. foreign aid) touted by the Rostow camp. Late in his career, Rostow defended himself against critics such as Bauer and Simon Kuznets:

> My colleagues insisted on regarding the rise in the investment rate in the take-off as a primal cause in the matter, say as a Harrod-Domar growth model. If I had it to do over again, I would state emphatically, right at the beginning, what I wrote...in 1960: "...The emergence of a rate of net investment sufficient to outstrip the rate of increase of the population and to yield a positive net rate of growth is at least as much the result of prior [sectoral] growth as a cause of growth."[59]

Here Rostow agrees with Bauer that previous indigenous growth is "at least as important" as what might be provided by external investment, but he leaves the door open to foreign aid - Bauer's regular object of scorn. After decades of development experience, perhaps the positions of Rostow and Bauer began to converge. They are close to agreement that investment alone is no guarantor of growth, but rather a covariant, along with a society's ability to treat historical accident and technical innovations as opportunities for growth. It seems obvious (comparing say, the different historical paths to modernity taken by South Korea and Britain) that peoples are not consigned to any preordained path to economic development. What is incontrovertible is that many of the detailed (generally "top-down", centrally planned) blueprints for development in Third World countries which large-scale investment failed. But not all: as we shall see in Chapters 3 and 4, India's White Revolution programme Operation Flood probably benefited from a mix of ambitious top-down, government-sanctioned planning and investment in urban centres, while measures of democratic procedure augmented the formation of rural milk cooperatives.

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[58] P.T. Bauer (1971) *Dissent on Development*: pp 293, 294, 297-8. Rostow and Bauer himself write that Bauer's views on development were influenced by his observations and appreciation for the rubber industry in Maylasia, and the cocoa, and other cash crop farming in West Africa.

[59] W.W. Rostow (1990) *Theorists on Economic Growth*: p 434.

It may, however, be useful to add that, where investment or aid has failed to fuel growth (perhaps in a crude application of the Harrod-Domar model), blame may be due to inappropriate or ill-timed investment. In the post-colonial era, many LDCs (overly-impressed by heavy industry in rich ICs) attempted "take-off"[60] by squandering scarce treasury resources or development aid on single industries. J.P. Cole wrote:

> a political goal in many developing countries... has been the establishment of an iron and steel industry. A heavy industrial base has also been considered essential in most socialist ones.[61]

This was true of post-WW-II India and China, influential models for smaller LDCs.[62] Perhaps, due to India's large domestic market its state-managed steel industry has had some success. Yet, neither has it - beset by over-manning and other inefficiencies that drain government expenditure - served as a rocket to economic growth. China, whose overall post-WW-II growth has roughly doubled India's[63] also mistook steel production for economic progress. Consequently, China wasted labour, and the landscape suffered long-lasting degradation in the "back-yard" steel furnaces of the Mao era.

Unfortunately, many smaller countries with factorial advantages of iron ore and coking coal but smaller domestic markets followed such unrealistic industrial policies, but were less able to afford them. *They neglected agriculture* and consumer goods such as textiles using farm products, instead spending on metallurgy what Hobsbawm termed:

> the very heavy investments required by even quite modest ironworks (compared to quite large cotton-mills).[64]

Others, finding deposits of bauxite (common around the world, just as iron ore and coking coal are), over-invested in the aluminium industry. Output usually exceeded domestic demand, and often had the bad fortune to come on line when the cyclical world market was not remunerative. In many cases, centrally-planned industrial policies impoverished consumers and left LDC governments deeply in debt to international lenders. Unable to sell their commodities abroad, these LDCs were unable

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[60] Michael P. Todaro (1985) *Economic Development in the Third World*: pp 64-66. Todaro agrees investment is necessary but not sufficient for take-off.

[61] J.P. Cole (1979) *Geography of World Affairs*: p 284.

[62] J.P. Cole (1979): pp 118, 391. After 1947, India built up its iron and steel industry in Jamshedpur.

[63] *Economist Book of Vital World Statistics* (1990): p 42, 69.

[64] E.J. Hobsbawm (1962) *The Age of Revolution: 1789-1848*: p 62.

to purchase cheaper food and other goods from overseas. After ignoring their agricultural sectors, many such countries became dependent on food aid.

Over-valued currencies & other disincentives to LDC agriculture

In some developing countries (LDCs), agriculture suffered worse than benign neglect. Policies often skewed the domestic balance between agricultural and industrial sectors, favouring industry over farms. Although most rich countries achieved developed status by expropriating wealth from their farm sectors, too many LDCs taxed farmers without returning any commensurate amount in government services. This amounted to "looting" farms to advance heavy industry.

More often it was "indirect taxes" that were even more harmful to agriculture: LDC governments often hurt domestic agriculture by maintaining their national currencies at artificially high rates of exchange against the currencies of the major industrial countries (e.g. the $US and the D-mark). This acted as a subsidy exacted from agriculture by industry, from effectively lowering the prices of machine tools and other capital-intensive imports from richer countries.[65] (Chapter 4 will examine issues of appropriate technology in Indian dairy development.) Rural economies were typically stunted when over-valued national currencies made the produce of Third World farmers artificially expensive and uncompetitive on world markets. That is one reason Bhagwati described over-valued currencies as prime "disincentives" to LDC agriculture.[66] Meanwhile, capital-intensive investments in high-tech factories around urban centres made cities employment magnets. More migrants from the disadvantaged countryside than could ever hope to find jobs streamed into the cities. This was a mixed blessing; it reduced rural unemployment, but robbed the countryside of productive workers.

Todaro Model of Rural-Urban Migration

According to Michael P. Todaro, early research tried to explain excessive rural-urban migration in Third World countries in terms of "social, cultural and psychological

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[65] Thus encouraging the import of inappropriate, capital-intensive high technology into countries where labour-intensive production was more appropriate, setting off a vicious circle of unemployment, declining income among workers, and declining demand for consumer goods.

[66] Jagdish Bhagwati (1988) *Protectionism*.

factors",[67] but he determined that the chief motivation for migration was the chance of high-paying jobs in urban centres. Operating from the economist's perspective that, given perfect information, most consumers make rational decisions, Todaro postulated that farmworkers moved to cities because of "urban-rural differences in expected rather than actual earnings." Todaro's theory of rural-urban migration explained:

> the apparently paradoxical relationship (at least to economists) of accelerated rural-urban migration in the context of rising urban unemployment.[68]

In other words, even if rural migrants could not immediately find better jobs in the cities, typically paying three or four times the average rural wage, Todaro showed their behaviour was not merely optimistic, but rational if their urban income eventually exceeded the opportunity costs of income they forsook in rural employment.[69] Their behaviour appears even more rational in the context of over-valued national currency rates, which Bhagwati condemns as a serious economic disincentive to rural agricultural sectors in LDCs.[70]

Import substitution & cash crops v. food crop debates in LDCs

When steel, aluminium and other commodity exports from too many LDC countries flooded the world market, or when there was a periodic dip in world business cycles, world prices fell, putting their national development plans in jeopardy. An LDC's economic crisis was compounded if it was short on cash to pay for imports. Import-substitution schemes were often imposed, in order to meet domestic demand, stimulate production and save foreign exchange currencies. Unfortunately, import-substitution often proved counter-productive to all of these goals[71], and in the long-term left LDCs less competitive than before on the world market. (Rich country technical advisors echoed these caveats to Indian dairy leaders, whose import-substitution in milk powder production was eventually successful.)

Another trenchant argument that has long embroiled agronomists, economists, geographers and others concerned with development is the cash crop versus food crop

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[67] Michael P. Todaro (1985) *Economic Development in the Third World*: p 256.
[68] Todaro (1985): p 258.
[69] Todaro (1985):p 261.
[70] Jagdish Bhagwati (1988) *Protectionism*.
[71] Michael P. Todaro (1985): pp 409-415. Import-substitution entailed tariffs on specified imports, and subsidies for their domestically produced counterparts.

debate. (It somewhat resembles the debate over the role of industrial policy in developing countries, i.e. whether industrial activities ought to be monolithic or pluralistic.) Should a nation concentrate on export crops for the world market, or self-sufficiency in food? Such a controversy with relevance for this thesis was over oil seeds (from cotton, rapeseed and other plants), which preoccupied planners and opinion makers in India over the last decade. The oil seeds question bears brief discussion here.

When Operation Flood, the White Revolution programme in India (relying on high input fodder, nutrients and concentrates to raise milk yield) got underway, oilseeds had long been a traditional adjunct of dairy cow fodder. Thus, to observers like Martin Doornbos, it was a "paradox"[72] that, just as development of the Indian dairy industry required additional intensive inputs including oilseeds, the liberalised economic policies of the Indian government allowed export of oil seeds as a cash crop. But India is a large country and oil seeds are just one of many products. Moreover, the country has a huge, relatively diversified domestic market which can buffer the fluctuations of the world market more easily than smaller, single-crop LDCs. When India sells oilseeds on the world market, it is possible that other domestic products can adequately substitute for exported seeds.

As intimated above, smaller LDCs find the cash crop versus food crop question even more difficult than sub-continent-sized India. If LDCs depend heavily upon just one or two export products, they are naturally more vulnerable to world market fluctuations than a multiple exporter like India. For instance, many LDCs which were not petroleum exporters suffered serious trade deficits after the OPEC oil embargoes of 1973-74 and 1979. Typically dependent upon widely available commodity exports such as coffee beans, these economies suffered severe current account trade deficits, because, lacking the economic leverage of the oil cartels, they were helpless to raise prices on their commodities enough to pay for oil and other imports.

However, recent experience in India underlines the need for realistic economic policies in all developing countries, whatever their size. Chapter 4 discusses further the economic austerity (and also a temporary resumption of dairy aid imports) forced upon

India by oil price rises in the Gulf War of 1991. On a happier note, Chapter 4 also finds evidence of increases in Indian oilseeds production.

The GATT & Liberalisation of Agricultural Trade

Global food trade is now at unprecedented heights. Food is rapidly becoming as freely traded a commodity as coal, or manufactured commodities like steel. However, until recently, agriculture was too sensitive a political and social issue for most countries to consider dismantling the array of overt and covert subsidies and tariffs that made the food trade one of the world's most regulated activities. This was true - to a surprising degree - of even the powerful industrialised countries of North America and Europe. Jagdish Bhagwati writes that agriculture was:

> Exempted from most of GATT's discipline...right from the start.[73]

In fact, when the General Agreement on Tariffs and Trade (GATT) was first drawn up in 1947, it was the US[74] (which in the 19th century specialised in agricultural exports in order to buy manufactures from Europe) that led efforts (applauded by France and other agricultural countries) to write loopholes into Articles XI and XVI, removing agriculture from the GATT agenda. In 1955, the Eisenhower administration pleased US farm lobbyists when GATT granted them a further waiver from agricultural liberalisation. In the early decades of the GATT, Bhagwati believes that their "small role in overall world trade and their low political profile and clout" probably deemed LDCs powerless to block IC waivers on agricultural trade. More to the point, Bhagwati writes that:

> the major developing nations were protecting their manufactures instead and therefore were not interested in lobbying for agricultural trade liberalisation. [75]

As world trade experienced annual real growth of 7% in the period 1948-1970[76], some progress toward bringing agriculture under the GATT aegis was made in 1967 in the "Kennedy Round" of GATT talks, when tariffs on primary commodities were cut

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[72] Martin Doornbos *et al* (1990) *Dairy Aid and Development*: p 15.

[73] Jagdish Bhagwati (1988) *Protectionism*: p 9.

[74] The US was reportedly a net exporter of raw materials and agricultural commodities until well into the 20th century.

[75] Jagdish Bhagwati (1988): p 9. All references this quotation and paragraph above are from Bhagwati.

[76] William. R. Keylor (1984) *The Twentieth Century World*: p 277.

sharply.[77] More dramatic changes were to come. In the 1980s, when New Zealand and Argentina joined a dozen (mostly poorer) countries led by Australia in the Cairns Group, to lobby for freer world trade in agriculture, all Cairns members, irrespective of their degree of "development" (*via* industrialisation or expansion of the services portion of their economies), shared one trait: a comparative advantage in agricultural production that could be exploited if world food trade were liberalised - particularly if the US, and especially the EEC, reduced farm export subsidies. Paul Kennedy writes that the "greatest beneficiaries" of a global phase-out of farm subsidies would be Australia, New Zealand and Argentina, in contrast to some farm communities in the US that might "wither away".[78] Nevertheless, despite the possible threats to some individual communities, the US (and trade representative Clayton Yeutter) became convinced that agricultural liberalisation would benefit the US in the aggregate, and it joined the Cairns Group demands.[79]

While Kennedy's gloomy prediction for some individual farm communities is likely correct, the US government has been working for decades to improve the profitability of its farm exports. Changes in US trade policy were forced by the costly over-extension of its military hegemony - in a pattern that Paul Kennedy compares to the history of the Portuguese, Spanish, Dutch and British empires.[80] Robert Gilpin fully agrees that functioning as military linchpin of the Western Alliance became a burden on the US. Most observers agree that the economic miracles of Japan, South Korea and other "little dragons" were partly due to US patronage. Access to the US market gradually raised Asian competitiveness, threatening US dominance. Gilpin accepts this analysis, crediting Cold War geopolitical initiatives by the US for it:

> there were no large, neighbouring non-communist economies to which the Japanese economy could be attached. In order to overcome this problem...the United States took several initiatives. One was to expedite the decolonisation of Southeast Asia; after all, one cause of the Pacific War had been that European colonisers had closed Southeast Asian economies to the Japanese. The US also sponsored Japanese membership in the "Western Club." [I.e. IMF, World bank, etc.] ...In addition, the US gave Japan relatively free access to the American market and American technology without an

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[77] Michael P. Todaro (1985) *Economic Development in the Third World*: p 587.

[78] Paul Kennedy (1993) *Preparing for the Twenty-First Century*: p 318.

[79] *The Economist* (December 22, 1990): p 89. Trade war threatened as the GATT talks floundered.

[80] Paul Kennedy (1987) *Rise and Fall of Great Powers*. Robert Gilpin and William Greider (see below) back up Kennedy's analysis that an over-extension of US military hegemony and openness to imports from Cold War clients undermined the post-WW-II Bretton Woods system.

> economic quid pro quo, although it did require strategic concessions (i.e. air and naval bases) from the Japanese.[81]

Apparently in essential agreement with Gilpin, Frances Moore Lappé and Joseph Collins relate that the US defined two export responses to rectify a persistent balance-of-payments deficit wrought by: (1) imports of consumer goods (especially from US allies on the Pacific Rim, e.g. Japan, Korea and Taiwan, whose access to the US market fuelled their export-led-growth); and (2) the one-half trillion dollars spent by the US - much of it overseas - on the Vietnam War (not to mention the US network of overseas bases and the nuclear umbrella over its allies).

One response was to raise exports of high-technology products, e.g. today the US continues to lead the world in civil and military aviation, and is also first in world arms exports - followed by Britain. Another response was a package of "Food Power" policies to increase US agricultural exports.[82] Lappé and Collins list several initiatives taken by the Nixon administration and the USDA in the early-1970s, to unleash US "Food Power":[83]

- The US renounced the Bretton Woods system of fixed international currency rates, in which the US$ was pegged at $35/ounce of gold, in 1971[84] This was followed by devaluations of the dollar (by 11% in December 1971, and a further 6% in early 1973), making US exports more attractive.

- The US would "tempt potential buyers" with low prices and cheap financing by the Commodity Credit Corporation (CCC). (The concessionary terms of these sales made them hard to distinguish from soft loans in food aid programmes, and it can be argued that they had the same purpose: promotion of US commodities exports.) The US brandished the banner of free trade, in urging other countries to accept US food

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[81] Robert Gilpin (1987) "American Policy in the Post-Reagan Era": p 37. This paper was originally presented at the Henry M. Jackson School of International Studies, at the University of Washington, in Seattle, to honour the late Senator Jackson on May 30, 1987. Gilpin's book *The Political Economy of International Relations* develops the themes of US-Japanese and West European Cold War policy, etc., in the late-1980s' light of declining US international economic hegemony. Gilpin's themes find resonance and citations in Paul Kennedy's (1993) *Preparing for theTwenty-First Century*.

[82] Frances Moore Lappé and Joseph Collins (1982) *Food First*: pp 50, 176-186.

[83] Lappé & Collins (1980) *Food First*: pp 177-178.

[84] William R. Keylor (1984) *The Twentieth Century World*: p 401.

exports, pointing to plans to abolish US domestic price supports as evidence of its good faith.

- Then USDA ordered cutbacks in US crops acreage - thus almost ensuring that world market prices would rise (irrespective of bad weather in other grain exporting countries, which as fate would have it, catapulted world prices beyond USDA predictions).

- USDA Secretary Earl Butz urged US farmers to plant "fence row to fence row", diluting their resistance to the abolition of price supports with reassurances of profits to be made from a "hungry world" ready for US food.

By these steps, the US improved its balance-of-payments accounts, prepared foreign acceptance of US grain sales, and weakened the position of foreign exporters such as France. The scene was also set for the huge 19 million MT sale of US grain to the USSR in 1972-73.[85] This sale was a fascinating saga which is important to this thesis, primarily for this reason: the exercise of US muscle on world grain markets served as a model for the expansion of US dairy sales, as surplus stocks (in both the US and EEC) mounted in the 1980s.

Like US grain exports, dairy exports were assisted by financing from the Commodity Credit Corporation (CCC) arm of the USDA, in what is called the Dairy Export Incentive Programme (DEIP). US guaranteed "soft" loans were instrumental in countering EEC dairy dumping on world markets in the 1980s. Although the GATT-1994 agreement was to cut the legality of CCC export subsidies for dairy and grain, it was, ironically, the muscle of CCC soft loans that helped bring the EEC to the GATT table in the first place. Current gains being made by the US on the Pacific Rim, in Australia and New Zealand's traditional dairy export enclaves (e.g. Malaysia), testify to the resolute success of the US "Food Power" drive.

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[85] Not all US government officials were aware of the impending Soviet grain deal. See Anthony Sampson (1974) and Dan Morgan (1979) for fascinating analyses of this landmark episode.

The US seeks to open Japan & OPEC countries to farm imports

It was ironic that Japan, Asia's chief industrial power (which had benefited from US markets in export-led-growth) also had some of the world's highest rates of protection for rice, beef and other US exports. Frances M. Ufkes details how Japan's "state sponsored beef sub-sector" and protection against other US farm products were "highly-politicised" issues in US-Japan trade negotiations.[86] The US attitude to the EEC was similar. Within the US, even opponents of the country's military policies resented the fiscal ability of the EEC (which spent less of its output on defence than the US) to protect its own farmers while subsidising sales abroad. A combination of factors were pushing the US into the arms of the CAIRNS group. Altogether, they would pester the EEC into liberalising world farm trade in the GATT-1994 agreement - including even those most sacrosanct of commodities, sugar and milk.

There will be more discussion of the Uruguay GATT negotiations, which culminated in the 1994 agreement, below. Of particular importance is a discussion of the analysis of Anderson & Tyers (1991) which explicates some of the trade problems of LDCs, which are meanwhile discussed in Nigeria's "wheat trap" following.

Nigerian "wheat trap" compared to Indian situation

The US became the world's largest agricultural exporter in the 1980s, with sales in 1989 worth $40 billion.[87] (Most of this was wheat, with the US accounting for nearly half of world imports. US penetration of foreign markets is illustrated in Nigeria. In 1910, just 20% of wheat imports came from North America, with the remainder originating in Britain and Germany, but by 1936, US traders accounted for 98% of Nigerian wheat imports. The US continued to dominate Nigerian imports, although France and the EEC made inroads, with subsidised sales comprising 5-10% in imports of (mostly soft) wheat. Andræ and Beckmann point out that (because of its oil exports):

> It is true that in Nigeria wheat imports have nearly always been on fully commercial terms. When in the 50s and 60s, great subsidies were given to many Third World countries, notably through the PL 480 campaign, Nigeria was not among the major beneficiaries. The trade has expanded enough by other means.[88]

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[86] Frances M. Ufkes (1993) "Trade liberalisation, agro-food politics and the globalisation of agriculture" in *Political Geography*, May: pp 215-231.

[87] B.A. Scholten (October 20, 1990) "Wird Bush Umwelt-Präsident" *Württembergisches Wochenblatt für Landwirtschaft* (WWL/BLW): p 8.

[88] Gunilla Andræ and Björn Beckmann (1985) *The Wheat Trap*: p30. They cite Clay & Pryer (1982):

In the early-1970s period of drought, civil war, and famine in Biafra, Nigeria did accept food relief, e.g. 56,000 tonnes, predominantly wheat, in 1971. Wheat donated during the Biafran famine probably accustomed an even greater share of the population to the taste of wheat - away from indigenous grains such as barley from the Jos Plateau. Andræ & Beckmann say that US wheat imports led to "under-development" in Nigeria by severing the backward linkages between urban mills and bakers to traditional farmers. But conspiracy theorists would be wrong to assume the famine as the only wedge to penetrate Nigeria. After all, the US had sold wheat to Nigeria for many decades. True, US food aid functioned as a "loss leader" for future commercial sales in many poorer countries. But Nigeria could *pay* for most imports on a commercial basis. Furthermore, oil price rises following the second OPEC oil embargo of 1980-81 made the US more aggressive in promoting commercial agricultural sales to all countries, with oil exporters like Nigeria high on the list. So sophisticated marketing overtures were in the offing.

Assiduous plotting of possible market prospects by the USDA office in Lagos developed commercial sales of maize, rice, tallow and (mostly) wheat. Andræ & Beckmann write that the Nigerian market was opened by:

> the classical means of official support for US wheat penetration[89]

The US had supplanted French interests by establishing the first flour milling plant in Lagos in the early 1960s. In 1980 a "Great Plains Wheat team" of US millers and bakers associations held courses to promote consumption of wheat-based foods. Andræ & Beckmann quote the following USDA memo to illustrate how crucial was the establishment in Lagos of a US-Nigerian Joint Consultative Committee(AJCC) to eliminate:

> the major constraint to the rapid expansion of US agricultural commodity exports to Nigeria...the lack of physical infrastructure, i.e. port facilities, feedmills, integrated poultry/ piggery/ livestock operations, flour mills, etc. The AJCC will facilitate private US investment in the Nigerian agrobusiness sector (USDA 1981).[90]

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p 5; I. Wallerstein (1980); and P. Kilby (1965): pp 8, 19.

[89] Andræ & Beckmann (1985) *The Wheat Trap*: p 31. They cite USDA (1981), and interviews with USDA counsellor George Pope. US expansion in Nigeria was akin to its earlier success in South Korea.

[90] Andræ & Beckmann (1985): p 31.

Needless to say, dairy marketeers around the world were familiar with the methods employed in US wheat promotions and sought to emulate them.

Food self-sufficiency matters more to India than to oil-rich Nigeria

The table below (Agrostat/FAO/1994: Trade/Index) compares the food imports of Nigeria and India and reveals some facets of their relative degrees of food self-sufficiency. Nigeria's 1979-81 (=100) *import value* of dairy product imports soon halved to a level still held in 1992, whereas the *import volume* of Nigeria's dairy imports gradually fell to 19.1 in 1989, rising to just 38.6 in 1992; meanwhile the *import unit value* of dairy imports rose to 128.4 on the scale of 1979-81=100, by 1992. Nigeria's dairy import trend was generally up in the early 1990s.

India's dairy import value hit a low of 3.6 on the 100 index in 1990 as EEC dairy aid to Operation Flood virtually stopped. Just two years later India's dairy import value index was 52.7 (close to Nigeria's) begging the questions: (1) what role did politics play in low dairy import value in India in 1990?[91] and (2) was the rise in value of imports to Nigeria in 1992 due to a surge in US dairy exports? That seems likely, because after the US *dairy product exports* index dropped to 127.8 due to severe drought in 1989, it rebounded to an impressive 138.0 in 1992. As for US dairy *production*, the index figures generally follow the pattern of exports, showing a dip in the drought year of 1989 (112.8 in 1989 compared to 113.4 in 1988) before a steady rebound to 118.74 in 1992.[92] These figures reflect success in the US drive to promote exports aggressively, as one means to pressure the EEC into liberalisation of agriculture trade under GATT.

In the case of cereals, Nigeria's 1979-81 (=100) *import value* of cereals fell to 17.1 in 1989 and 34.1 in 1992, whereas the *import volume* of Nigeria's cereals hit 24.9 in 1989 (lowest: 20.8 in 1990) and rose to just 49.0 in 1992; meanwhile the *import unit value* of cereals changed little (1989: 68.9) between 1985 and 1992 when it was 70.2. (Below, related Agrostat data reflect that as the Green Revolution progressed 1961-92, India became a net cereals exporter while Nigeria relied more on cereals imports.)

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[91] Chapter 4 of this thesis suggests that the 1992 renewal in India dairy imports was due to an economic crisis brought on by Gulf War oil price increases.

[92] Agrostat/1994/FAO: Trade/Index/US dairy product exports/ and milk production in the computerised database.

Table 1

India & Nigeria dairy & cereals imports: 1961, 1986, 1992 (1979-81=100)			
	1961 import value dairy	1989 import value dairy	1992 import value dairy
India	12.6	52.4 (1990=3.6)	52.7
Nigeria	6.0	23.4	51.7
	1961 import volume dairy	1989 import volume dairy	1992 import volume dairy
India	58.6 (1970=46.9)	45.2 (1990=2.9)	55.5
Nigeria	22.0	19.1	38.6
	1961 import unit value (u/v) dairy	1989 import unit value (u/v) dairy	1992 import unit value (u/v) dairy
India	20.1 (1970=20.8)	94.1 (1990=104.1)	96.4
Nigeria	34.0	90.9 (1990=121.5)	128.4
	1961 import value cereals	1989 import value cereals	1992 import value cereals
India	no data	no data	no data
Nigeria	1.8	17.1	34.1
	1961 import volume cereals	1989 import volume cereals	1992 import volume cereals
India	no data	no data	no data
Nigeria	4.0	24.9	49.0
	1961 import unit value (u/v) cereals	1989 import unit value (u/v) cereals	1992 import unit value (u/v) cereals
India	27.5	85.1	66.5
Nigeria	44.9	68.9	70.2

Source: Agrostat/FAO/1994[93]

Observers aware of the similarity between the "top-down" establishment of transport and dairy processing facilities in India's programme Operation Flood to the infrastructure-building in Nigeria (i.e. the wheat processing plants built by the US in Nigeria, noted by Andræ & Beckmann) might well have become more fearful that India's White Revolution being coopted by the EEC for its own benefit. However, Agrostat figures in the accompanying table show that compared to Nigeria (whose oil earnings could pay for food imports), India was moving toward self-sufficiency in cereals and dairy products. (More on this in Chapters 3 and 4.) Meanwhile, the next section recounts Anderson & Tyers' analysis of the damage done to the world's poor country farmers by rich country protectionism.

[93] Agrostat/1994/FAO: Trade/Index/ India, Nigeria.

Anderson & Tyers on LDC loss of world exports *via* IC subsidies

Among the plethora of economic arguments made by Kym Anderson and Rodney Tyers' in favour of liberalising world farm trade, is one with appeal to geographers, geneticists and health workers as well as economists. They argue for a more geographically-diverse network of food exporters, because dispersed production is less liable to supply and price fluctuations, due to the vagaries of climate and disease. Thus world food security (and the genetic pool of foodstuffs) would probably be safeguarded if many more geographically-dispersed LDC farmers contributed to world stocks.[94] But the thrust of Anderson & Tyers' thesis is the inequitability of the terms of trade suffered by poor countries, and the need for liberalisation under GATT. Anderson & Tyers note that rich industrial market economies (ICs) gradually eroded the world market share of developing countries (LDCs). **(See Table 1 titled *Indian & Nigerian dairy & cereals imports.*)**

Anderson & Tyers' research investigated trade in the most important agricultural commodities traded on world markets - a weighted selection of grains, meats, milk products, and sugar, measured in $US. In the early 1960s, rich countries (i.e. the First World) held about 50% of world of world market share, with the other half divided between centrally-planned eastern Europe (i.e. the Second World) and developing countries (i.e. the Third World). By the mid-1980s, the First World held an astounding 70% of world market share, while eastern Europe and developing countries combined had to settle for just 30%.

Ominously, the terms of trade worsened for the centrally-planned Eastbloc as well as the developing world. From the period 1961-64 to the period 1983-86, the food self-sufficiency of the Eastbloc dropped from -1% to -2% to -5% . Most alarmingly for developing countries, what had been a food surplus of 2% to 3% in 1961-64 plunged to -2% to -3% in 1983-86.[95]

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[94] Kym Anderson & Rodney Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*. Indeed, it seems intuitively obvious that a more geographically diverse food production portfolio would be a better guarantor of world food security than one centred in North America and western Europe. A dispersed system could better compensate for regional animal or plant disease, as well as climatic upheaval.

[95] Anderson & Tyers (1991): pp 12-18.

Because the food security, as well as the export competitiveness of poorer countries was falling, the CAP has been seen as an instrument of neo-colonialism by LDCs who could not afford to compete on world export markets with the EEC. What began in the 1957 Treaty of Rome as an admirable attempt at food self-sufficiency eventually came to represent unfair trade practises by the EEC (*aka* the EC and EU). Anderson & Tyers charged that past (i.e. pre-GATT-1994) export and production subsidies in the EEC cost poor country farmers nearly 50p in lost earnings for every £1 spent on EEC protection.

This was a serious charge. But it is a fact that the EEC subsidised its farm exports far more than any other large exporter, including the US. When the US stepped up its subsidy war against Europe with the Food Security Act of 1985 (using export subsidies to double US world dairy exports share from 4.4% in 1990 to 7.9% in 1992) because the EEC was taking US world market share, even then, US farm subsidies rose to just half EEC levels! At the same time that the EEC claimed to be alleviating poverty in India with its donations of dairy aid, France and other highly-subsidised wheat producers were dumping cereals on world markets. Although the EEC made some trade concessions to ACP countries under the Lomé Conventions, protection remained high against food imports from many other poor countries. EEC apologists claimed their food mountains were a buffer against world shortages, but the EEC was seen by potential cereals and dairy exporters among LDCs and the Cairns Group as a hypocritical player robbing the poor of export opportunities - even depressing their domestic agriculture.

Anderson & Tyers argue further that periodic EEC dumping led to price fluctuations that harmed poorer farm exporters, and contributed to a long-term downward trend on real prices:

> [All of this was] of serious concern to the majority of the world's poor, namely farmers in low-income countries who account for almost three-quarters of the world's farm workers and over a third of the world's workforce.[96]

It is this view, shared by many non-EEC (EU) countries, that fuelled widespread demands for reform and brought agriculture under the aegis of the GATT for the first

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[96] Anderson & Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*: p 1.

time in 1994. **Table 2** below shows how dramatically the distribution of world food trade shifted against LDCs and Eastbloc countries between 1961-64 and 1983-86.

Table 2

Anderson & Tyers'[97] research shows: Industrial Market Economies (ICs) eroded world market share of Centrally-planned Eastern European Countries & Developing Economies (Eastbloc & LDC).		
	ICs	LDCs & Eastbloc
1961-64 food exports	<50%	>50%
1983-86 food exports	70%	30%
1961-64 food imports	>50%	<50%
1983-86 food imports	40%	60%

Source: Anderson & Tyers (1991)

Agrostat/FAO data support Anderson & Tyers

Agrostat/FAO/1994 statistics on agricultural products trade[98] support the viewpoint of Anderson & Tyers. Leaving aside the matter of Centrally-planned Eastern European Countries (CEEC, also losing market share), several conclusions can be drawn from the horizontal bar graph and two tables drawn from Agrostat[99], below. First of all, poor country (LDC) value of all agricultural product exports did not lag very far behind rich country (IC) exports, 1961-64. Thence, trends worsened. Minuscule LDC agricultural imports in 1961-64 grew an enormous 8-times by 1983-84, supporting Anderson & Tyers' view that poor country food imports grew dramatically.

As for exports, Agrostat data show that while LDC exports grew nearly 5-times from 1961-64 to 1983-86, they were (starting at a lower base than ICs) far outpaced by rich IC exports - probably owing greatly to the export subsidies criticised by Anderson & Tyers. The fact that IC agricultural imports grew 5-times from 1961-64 to 1983-86 can probably be explained by increases in specialisation of labour, and horizontal links in agriculture *between rich countries* - most notably countries comprising the EEC. In

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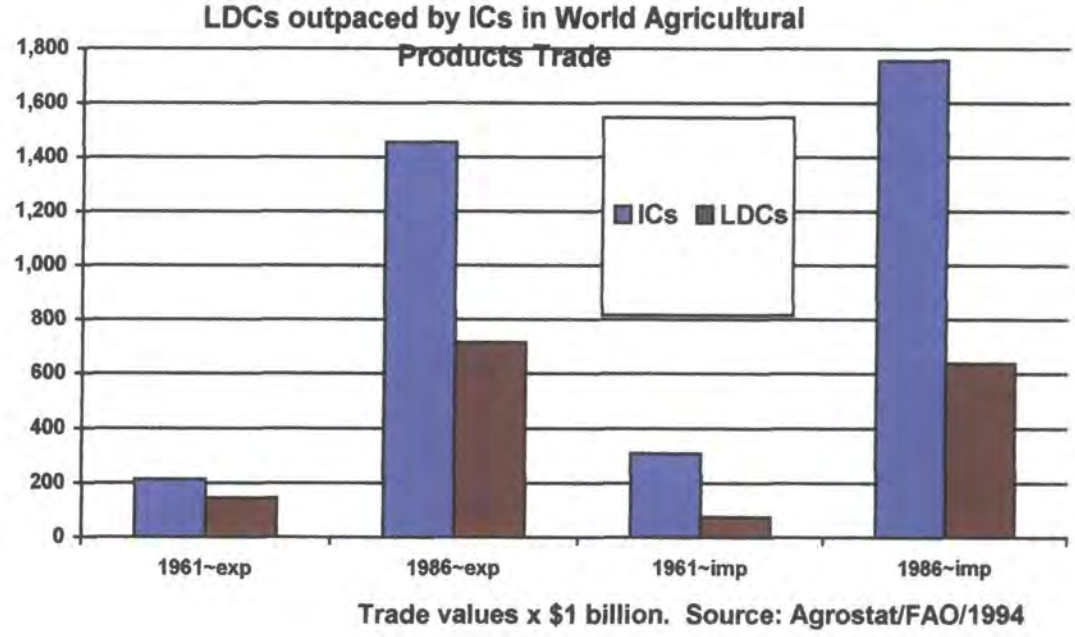
97 Anderson & Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*. This is a revised account of research prepared by the authors for the World Bank's *World Development Report* for 1986.

98 *Agrostat-PC* (1994) FAO/1994/Trade/Value/Economic Groups/Agricultural Products.

99 *Agrostat-PC* (1994) FAO N.B. in bar graph, 1961 stands for mean $US in 1961-64; 1986 stands for mean $US values 1983-86.

other words, rich countries increased their agricultural imports *from each other* more than from poor countries.[100]

Figure 1



The table immediately below shows the value of food imports to poor countries increasing much faster than their exports.

Table 3

Agrostat/FAO supports Anderson & Tyers'[101] claim that Industrial Market Economies (ICs) eroded world agricultural products market share of Developing Economies (LDCs) (x US$100,000)		
	ICs Developed	LDCs Developing
1961-64 food exports	$212,842	$144,066
1983-86 food exports	$1,456,100	$715,294
1961-64 food imports	$309,440	$75,580
1983-86 food imports	$1,755,921	$639,251

Source: Agrostat/FAO/1994/Trade/Value/Economic Groups/Agricultural Products

[100] It is also possible that IC food import figures are somewhat inflated. Agribusinesses, like other MNCs, sometimes pass the same commodity back and forth among their company divisions in rich countries, with a small portion of "value-added" accruing at each stage of processing, between farm and market - resulting in inflated import statistics. Needless to say, this makes accounting difficult for tax purposes, etc.

[101] Anderson & Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*.

Table 4 suggests that developing countries (LDCs) also had more difficulty in recovering from the early-1980s recession induced by oil price rises than did rich developed countries (ICs).

Table 4

Agrostat shows ICs outpacing LDCs in food trade. (1979-81=100)			
	1961 Import Unit Value (u/v)	**1986 Import Unit Value (u/v)**	**1992 Import Unit Value (u/v)**
ICs developed countries all	30.1	101.1	134.9
LDCs developing (not Eastbloc)	30.8	75.8 (u/v imports peaked 1981: 108.8)	91.9
	1961-64 Export (u/v) mean Unit Value	**1983-86 Export (u/v) mean Unit Value**	**1989-92 Export (u/v) mean Unit Value**
ICs developed countries all	34.0	90.0	123.3
LDCs developing countries	28.6	84.9	94.8
	1961 Import Value	**1986 Import Value**	**1992 Import Value**
ICs developed countries all	13.0	101.5	159.6
LDCs developing countries	10.2	82.5	126.5
	1961-64 mean Export Value	**1983-86 mean Export Value**	**1989-92 mean Export Value**
ICs developed countries all	12.8	90.8	140.1
LDCs developing countries	16.7	102.1	131.4
	1961 Import Volume	**1986 Import Volume**	**1992 Import Volume**
ICs developed all	43.2	100.4	118.3
LDCs developing	33.4	109.5	138.6
	1961 Export Volume	**1986 Export Volume**	**1992 Export Volume**
ICs developed all	34.6	98.3	117.7
LDCs developing	55.9	123.8	126.5

***Source*:** Agrostat/FAO/1994/Trade, Index, Economic Groups, Food

Because low-value-added food exports are the chief means by which poor countries can purchase high-value-added (HVA) rich country exports like 747 Jumbo-Jets, machine tools, books and computers, this trend has disturbing implications for poor and rich countries alike. The already inequitable distribution of world income was likely to be skewed further unless the terms of trade for poor countries were improved. Moreover, in enlightened self-interest, some rich country exporters expected that if farm trade were reformed, the Third World could afford more of their HVA exports. This was one

of the most compelling reasons for the liberalisation of world agricultural trade in GATT-1994.

1980s: The US adopts CAIRNS stance on GATT farm trade liberalisation

Despite protests from some domestic farm lobbyists, the US government agreed with the Cairns position that agriculture should be on the agenda in the Uruguay Round of the GATT. In language dating back to Smith and Ricardo, the Cairns Group wished to "liberalise" agriculture. This meant that all forms of assistance to all of the world's farmers and food exporters (including explicit subsidies, hidden income subsidies, tax relief, export subsidies and tariffs on imports) ought to be clarified in a process eponymously dubbed "tariffication". The Cairns Group demanded that - like industrial goods - food exports should have all their erstwhile hidden tariffs made explicit.

Of course, Cairns countries argued that nontariff (NTBs) barriers could be as effective constraints on trade as are high import duties. By this time, many of the guises developed in the 1970s and 1980s as non-tariff barriers to non-agricultural goods were well known. For autos, they were typified by voluntary export restraint (VER) agreements between Japan and the US, or Japan and France and Italy. These so-called voluntary agreements were (and are) generally agreed *via* strong-arm diplomacy. Ironically, they often benefited exporters who could charge more for the limited quantity of their exports on offer. Before the Uruguay Round of GATT, agricultural trade found its equivalent of automobile VERs in bilateral trade deals.[102]

Another nontariff barrier was typified by bureaucratic bottlenecks, even within the so-called Single Market of the European Community after 1986. A typical example from the late 1980s comes again from France. Inspection of fresh tomatoes and other produce conducted on France's Pyrenees border with Spain was at times done in such a desultory manner as to ensure the spoilage of much produce before it reached market.

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[102] Dan Morgan (1979) *Merchants of Grain*: p 292-294. The reputation of the US as a reliable exporter was damaged when it unilaterally reneged on a deal selling nitrogen-rich soyabeans to Japan in 1973. This was one ramification of the US-Soviet grain deal of 1973 that boosted world prices for many commodities.

Nevertheless, the principal nontariff barriers to agricultural trade were invisible government subsidies to domestic farmers, resulting in price differentials that were insurmountable to outside goods. Harder to identify than price support programmes, agricultural protection often took the form of hidden income subsidies or tax relief which, like explicit tariffs or customs duties, effectively raised the price of imported food. Formerly, plaintiff countries had asked, simply and rather naively, that others lower their import tariffs. In the Uruguay round, the Cairns group and others demanded more substantive measures: that all hidden subsidies and non-tariff barriers be laid plainly on the table ("tariffied", as mentioned above), to make trading costs more calculable. Cairns demands met with much success. Pending ratification by all (107 to 116, depending on how they are counted) signatories to the 1994 Uruguay GATT agreement, most international food trade is now - for the first time - being brought under the aegis of the new World Trade Organisation (WTO). Although the GATT itself "will cease to exist and will be replaced by" the WTO, common parlance continues to equate GATT and WTO as synonyms.[103]

After January 1995, the WTO became the principal forum for conflict resolution within the continuing GATT process. A new Dispute Settlement Body (DSB) is being established to distinguish legitimate phytosanitary rules on trade from covert trade barriers[104], and this promises to be an enduring focus of activity as biotechnologically-enhanced products, e.g. milk from cows injected with BST[105], soyabeans, tomatoes and other exports enter the world market from the US. In brief, the WTO promises to be "a far more powerful mechanism for resolving disputes" such as dumping and non-tariff barriers than was the GATT, with according to *The Economist*, with signatories making an "implicit surrender of sovereignty". The magazine claims it is a small surrender that could "permanently raise global welfare by $100 billion a year."[106] - but it is fiercely contested by Eurosceptics in Britain and other pockets of resistance in Europe.

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[103] *NFU/International* 1/94 (January 5, 1994) "NFU Briefing: GATT settlement in agriculture": pp 9-10. Contact: Martin Haworth (Part I); NFU Economics Dept. (Part II). This 34 page briefing is a practical guide to the Uruguay agreement's effect upon agricultural trade. N.B.: "As a result of this Agreement GATT itself will cease to exist and will be replaced by a World Trade organisation (WTO) [Cf: p 10]."

[104] *NFU/International* 1/94 (January 5, 1994) "NFU Briefing": p 10.

[105] B.A. Scholten (June/July 1993) "Europeans may extend BST ban" in *Dairy Today*.

[106] *Economist* (October 17, 1992) Editorial.

Dairy comes under GATT

International dairy trade is also being freed up. The 1994 Uruguay GATT agreement was a landmark for international dairy product trade, with possible ramifications for dairy commodity aid if - as expected - trade rules changes reduce subsidies and protection of dairying in countries (primarily in North America and Europe) that have been the main sources of surplus commodities for dairy aid. According to David R. Harvey[107] the South has a comparative advantage in production of fruit, some vegetables and (due to composition of the labour force, if not climate) dairying, while the chief Northern comparative advantages is in cereals (due to climate and soil composition). It is difficult to predict the global effects of a complete liberalisation of world dairy trade, but this thesis expects countries in the South, such as Mexico, to further develop its potential for dairy exports. If the North is to respond, its dairists[108] must take full advantage of temperate climates, cost-effective inputs, and efficient technology in order to produce dairy commodities at or below world price levels.

GATT-1994's winners & losers

The results of the agricultural liberalisations agreed in the 1994 GATT accords will not be clear for some time. The international situation is complex, and in some respects, changing faster than in previous decades. Prosperity in China and other emerging economies (now reaching income "thresholds" where national demands for grain imports to feed farm animals follows increased consumer demand for livestock products) is already affecting world food stocks and price levels.

It is also important to bear in mind that the ultimate liberalisations, e.g. cuts to farm subsidies, etc. were ultimately watered down by deft negotiations, on the exact time-periods to be used as bases for cuts, as well as wording of the agreements. Chief beneficiaries of these sophisticated negotiating delays and tactics were France and the EU (formerly EEC). Of course, developing countries that are potential food exporters, continue to be critical of such protectionist tactics by what they call "Fortress Europa". Observers generally agree that any positive or negative results derived from GATT

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[107] Personal communication: Prof. David R. Harvey, Department of Agricultural Economics and Food Marketing, University of Newcastle-upon-Tyne.

[108] M.V. Kamath (1989) *Management Kurien Style: The Story of the White Revolution*. M.V. Kamath and some other writers on Indian dairying use the graceful word "dairists" for dairymen and dairywomen.

liberalisation also depend upon the extent to which liberalisation is carried out among OECD and/or developing countries.[109]

Because subsidy cuts can generally be expected to lower national food stocks (and probably reserves held by the WFP, etc.), upward pressure can be expected upon world food commodities prices. In the long run, this may not be as detrimental as it sounds because, as Anderson and Tyers point out *real* international prices now are approximately 25-50% lower than in the year 1900.[110] Indeed, there seems to be scope for farmers to recover some net percentage of a more prosperous world's income - particularly since subsidies in rich countries have been a chief factor in keeping world market prices artificially low. Such price rises will naturally favour LDCs who happen to be food exporters (leaving aside for now the ongoing "cash crop v. food crop debate").

On the downside, most observers expect countries listed as "food-deficit-low-income" countries (e.g. Peru), to suffer economically from agricultural liberalisation. These countries provide the best case (as advocated by food aid advocates from Hans Singer, to James Ingram of the WFP) for an expanded role for food aid in the world economy, albeit with more sensitive "early-warning" field reports to minimise market price distortions, or disincentives to domestic farmers. Low-income-food-deficit countries such as Peru could, according to Singer and Ingram, receive food aid to improve their balance-of-payments accounts, similarly to how India "monetised" dairy aid in the White Revolution, and as African countries are now doing to alleviate (SAPs).

GATT scenarios: bad TRIPs for LDCs?

Although this thesis is sanguine on the prospects of GATT-1994 liberalisation, the case for pessimistic outcomes remains uncomfortably strong. The table below gives "Three Scenarios for liberalisation Effects on LDCs". Although patents and intellectual copyrights are not the focus of this thesis, it is worth noting that Third World countries (including India and China) resisted GATT extension of protection for Trade-Related

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[109] Raymond F. Hopkins (1993) "Developing Countries in the Uruguay Round: Bargaining Under Uncertainty and Inequality" in *World Agriculture and the GATT*, edited by William P. Avery: pp 143-163.
[110] Anderson & Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*: pp 2, 63.

Intellectual Property Rights (TRIPS) on, e.g. high-yield-variety (HYV) seeds and biotechnological products such as BST for increasing milk yield. LDCs wary of TRIPs see them as a wedge by which MNCs (e.g. Geigy, Monsanto) from rich countries can entrench themselves in poor country agriculture in a process which Ben Fine *et al* term:

> appropriationism...the encroachment by capitalist products and processes within agriculture itself.[111]

In assessing GATT-1994, even *The Economist* magazine - a bastion of free agricultural trade since abolition of the Corn Laws over 150 years ago - admitted after the signing of GATT-1994 that Third World countries fears on the copyright and patent provisions (i.e. TRIPs) might prove to have some basis in fact. Two writers fluent in the technicalities of GATT-1994, Bernard Hoekman and Michel Kostecki write:

> There are no definitive empirical estimates of the impact of the TRIPs agreement on developing countries (see maskus and Eby-Konan, 1994). Much depends in this connection on the dynamic effects of this agreement....Market structure and conduct is very important. [112]

Other observers are not so equivocal. A USDA study **(Table 5)** found that GATT liberalisation by OECD countries *alone* would have a negative effect on LDCs, although LDCs would gain if they also completely liberalised their trade. More ominous (but in some respects less thorough) was an UNCTAD report predicting losses for developing countries in OECD-alone, or in complete global liberalisation of world agricultural trade.

Table 5

Three Scenarios for Liberalisation Effects on LDCs					
	Anderson and Tyers		UNCTAD	SWOPSIM (by ERS of the USDA)	
	OECD only	Global	OECD only	OECD only	Global
Net change in welfare ($US billions)	11.5	56.3	-0.6	-4.5	2.6

Source: Raymond F. Hopkins in William P. Avery, 1993[113]

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[111] Ben Fine, Michael Heasman & Judith Wright (1996) *Consumption in the Age of Affluence: the World of Food*: pp 47-54, 48.

[112] Bernard Hoekman & Michel Kostecki (1995) *The Political Economy of the World Trading System: from GATT to WTO*: pp 144-158, 156-157. Hoekman (Senior Economist at the World Bank) & Kostecki (Professor, University of Neuchatel) are citing K. Maskus & D. Eby-Konan (1994), "Trade-Related Intellectual Property Rights: Issues and Exploratory Results" in A. Deardorff and R. Sterns (eds.). *Analytical and Negotiating Issues in the Global Trading System* (Univ. Michigan Press, Ann Arbor).

[113] Raymond F. Hopkins (1993) "Developing Countries in the Uruguay Round" in W.P. Avery (1993). Hopkins cites Anderson & Tyers (1990a), UNCTAD (1990), and the Economic Research Service (ERS/USDA 1989a) SWOPSIM study on GATT liberalisation for the USDA. Hopkins notes that Krueger, Schiff and Valdez (1988b) also project welfare gains to LDCs if they liberalise their own economies. [A. Krueger, M. Schiff, and A. Valdez (1988b) "Measuring the Impact of Sector-specific and

Looking at the GATT-1994 agreement *in toto*, this thesis gives more credence to the work of Anderson & Tyers, about whom Raymond F. Hopkins explains:

> They disagree that effects of OECD liberalisation would have a net negative effect [on LDCs). The difference may be explained, possibly, by noting that the other models were based on immediate effects, whereas the Anderson and Tyers model runs over several years to 1995. Further, there were differences in base years, commodity coverage, and elasticity estimates among the models.[114]

Likely beneficiaries of GATT-1994

In sum, this thesis sees evidence that, in the long- and perhaps medium-term, the 1994 Uruguay GATT agreement could benefit:

(1) Third World, and former-Eastbloc farmers who have a comparative advantage in agriculture. Raymond F. Hopkins points out that LDC members of Cairns, e.g. Chile and Fiji, would be expected to gain. Anderson & Tyers (1991) expect liberalising agricultural trade to go far in rectifying imbalances in the terms of trade suffered by most poor countries since rich countries began dumping surpluses on world markets.

(2) Some farmers in rich countries which enjoy comparative advantages, e.g. the US in wheat[115], and perhaps Argentina in beef and wheat.

(3) OECD dairy farmers who specialise in high-tech, efficient dairying, e.g. some in the US and perhaps Britain and Ireland. This is not to say that the future is clear. For instance, if GATT-1994 (and NAFTA) rules are ever fully enforced, Mexican dairy exports could make inroads into the US and Canadian markets, as well as throughout Latin America.

Synopsis of GATT-1994

Irrespective of uncertain future benefits, some changes mandated by GATT-1994 are known. A synopsis of the Uruguay GATT/WTO settlement from the NFU (of Great Britain) gives the salient points the GATT/WTO agreement, which came into effect in

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Economy-wide Policies on Agricultural Incentives in Developing Countries." *World Bank Economic Review* (September 2): pp 255-272.]

[114] Raymond F. Hopkins (1993) "Developing Countries in the Uruguay Round" in W. P. Avery (1993).

[115] Andræ & Beckmann (1985) *The Wheat Trap*: p 146.

1995, and is to last for six years.[116] The accords address the important areas of: (1) internal support (i.e. domestic farm subsidies), (2) export subsidies and (3) "tariffication" making explicit the hitherto hidden forms of protection against foreign farm imports[117]:

(1) Internal support: All industrialised countries (ICs) including the EU (European Union, as the EEC was officially known after 1992) and US must reduce their internal support (i.e. domestic subsidies) of farmers by 20% over six years, on a base period of 1986-1988. Some highlights:

- These subsidies are assessed by a calculation called the Aggregate Measure of Support (AMS) which seeks to quantify the value of all non-trade-distorting support given directly or indirectly to farmers. (See footnotes)

- Special concessions have been made to developing, or less developed countries (LDCs) in the Third World. Preferential agreements were negotiated with Central and Eastern European countries (CEECs) as well as North Africa.

- The least developed countries (LLDCs) are not obligated by the Uruguay agreement to make any farm support cuts whatsoever.

(2) Export subsidies: The same NFU report also admits what Third World and Cairns group countries had charged: "Effectively only the European Union and the USA subsidise their exports." Therefore, the EU and US are the only blocs affected by new rules mandating reduction of export subsidies - although the US, whose internal (i.e. domestic) prices were closer to world prices, would find it easier to comply. (The rice industry of Japan, the third trade bloc in question - with prices around seven-times world levels, seemed more vulnerable to cuts on domestic subsidies and tariffication rules than, say, cuts of subsidies of food exports, which were of minuscule importance compared to its automotive and electronic exports.) Generally speaking, the agreement requires that, in regard to export subsidies:

- ICs must reduce subsidies on farm exports by 36% over six years, on a 1986-90 base. ICs must cut 21% of their volume of subsidised exports over six years on the same base. These cuts

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[116] *NFU Briefing International* 1/94 (1994) Thirty-four pages: pp 2, 17.

[117] *NFU Briefing International* 1/94: pp 2-8. The NFU report addresses the WTO issues in slightly different order from this thesis, but is in accordance with my views, which have been informed by regular press releases and seminars by Britain's NFU among other sources. The AMS calculation is a global one made for the whole of a country's agriculture - *not* sector by sector. The AMS includes a wide variety of government farm subsidies (i.e. internal supports) including: advisory services, all CAP reform compensation (e.g. suckler cow premium, but *not* HLCA payments to farmers in disadvantaged hillside regions in the EU), environmental programmes, and early retirement for farmers.

must be to each line of dairy products, e.g. 36% of butter, 36% of milk powder and 36% of cheese - *not* simply a 36% cut in aggregate dairy products. (The cuts on volume exports were expected to hurt EU farming worse than "tariffication".)

- Non-subsidised exports are not subject to volume reduction.
- Food aid is not subject to any cuts. [118]

While direct export subsidies are outlawed under the WTO, trade boosterism, in the form of trade fairs and high-profile trade missions coordinated according to information gathering by government agencies remains legal continues to be vigorously pursued by Britain, France and the US. The US food lobby ensures that approximately two-thirds ($186m) of the $250 million export promotion budget is allocated to food .[119]

(3) Tariffication: All barriers to foreign agricultural imports (e.g. variable levies in the EU or import quotas in the US and Canada) must be "tariffied" into tariffs of equivalent effect (See also above). Here are highlights from the NFU synopsis:

- In the aggregate, tariffs on imports must be reduced by 36% over six years, with no tariff on individual items being cut by less than 15%. Tariffs will be cut in six equal steps.

- Because the base period (1986-1988) for many agricultural commodities was marked by low world price (FOB) levels, it was expected that tariffication would leave the EU with a high remaining level of external protection (lending some credence to critics of "Fortress Europe"). However, minimum access rules would ensure that if import volumes of meat, SMP, butter and cheese do not rise by 3% to 5% of internal EU consumption by the year 2000, tariffs on these imported commodities must be cut by up to 32%. (See below for parallel effects upon North America.)

- The EU would cut tariffs on beef and pig liver 100%, cut those on SMP 20%, and cut tariffs on products with sugar or SMP components 20%.

- The EU would cut tariffs on beef and pig liver 100%, cut those on skimmed milk powder (SMP) 20%, and cut tariffs on products with sugar or SMP components 20%.[120]

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[118] *NFU Briefing International* 1/94: p 8.

[119] *Economist* (February 1, 1997): pp 23, 58. Powerful MNC processors like RJR Nabisco and General Mills probably have as much - or more - clout than farmers in lobbying for promotion of US food exports. Examples of ample spending include ANUGA, a food trade fair held in seven buildings in Bonn in 1989 when the US promoters occupied an entire building.

[120] *NFU Briefing International* (1994): pp: 4-6, 9. Another article in *The Economist* (February 1, 1997): p 23, 58, shows that the EU had already cut most CAP intervention prices (and as mentioned, world prices in the 1986-1988 base period were low), the EU considered the GATT tariffication agreement to be an economic victory for its still-protected farmers. Nevertheless, admission of Central & Eastern European countries to the EU was expected to threaten remaining subsidies protecting farmers in western Europe. A

The Uruguay agreement allows more stringent measures (e.g. quotas, tariffs, etc.) against fruit, vegetable and other farm exports from non-GATT members such as the People's Republic of China.[121] Although China has the largest domestic market in the world (and in the 1990s has again reverted to status as a net food importer), making it somewhat immune to international trade pressures, China's desire for foreign exchange will be a factor motivating it to join the new WTO, if other issues can be negotiated. Within the purview of this thesis, it is easier to envision a prosperous, populous China in the 21st century as a dairy product importer, rather than a top exporter.

Before the GATT agreement in 1994, domestic milk (and sugar) producers in the (sparsely populated, compared to China) US were protected by quotas on foreign imports. These quotas on imports were stipulated in Section 22 of US trade law, permitted in pre-Uruguay GATT agreements. Canada and Europe went beyond the US example of setting quotas on imports under Article XI of the pre-Uruguay GATT[122] by installing indigenous production quotas and pricing regimes. Similarly, Japan subsidised inefficient (but picturesque) small-scale rice production, and protected it from foreign imports, under similar GATT loopholes.

After GATT-1994, dairy protection in Canada, Europe, the US and elsewhere must now be tariffied, i.e. made transparent to international traders. Canada's domestic milk quota regime is undergoing difficulty because of the extra 5% to 6% volume of imports it must accept under the GATT; furthermore, Canada was under pressure from the US under the NAFTA trade agreement.[123] EU milk quotas may become financially untenable around the year 2000, as former Eastbloc countries with farm sectors providing ca. 27% of all employment[124] are admitted to the single market. The US is

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MAFF press release (January 8, 1997; 5/97: pp 1-6, p 2) "Baldry outlines the need for CAP Reform", emphasised the pressure that incorporating former Eastbloc countries into the EU will put on the CAP. However, some reputable researchers (A. Swinbank (December, 1996) *Food Policy*) insist the pressure of EU enlargement is exaggerated and need not threaten the CAP *status quo*.

[121] *NFU International (1994)*: p 34. This vulnerability to constraints on its ag trade is surely an inducement for China to join the WTO - if it can accommodate itself to expectations on human rights, etc.

[122] Jagdish Bhagwati (1988) *Protectionism*: p 9.

[123] *Hoard's Dairyman* April 25, 1995 "Nasty trade dispute threatens Canada's milk markets": p 311. NAFTA stands for North American Free Trade Agreement.

[124] *Economist* (July 29, 1995) "Farm follies": p. 36. Former Eastbloc countries desiring admission have farm sectors with ca. 27% employment, compared to EU-15's ag. sector with ca. 6% of total employment.

relying upon its efficiency in milk production - even after agreeing to an additional 2.5% equivalent of its domestic volume in extra dairy imports[125] - to continue a major dairy export drive that may be questionable under GATT/WTO rules.

The US share of world dairy exports had nearly doubled from 4.4% in 1990 to 7.9% in 1992. Under congressional pressure to cut dairy surplus storage costs, the Clinton administration moved aggressively to expand exports further. Coming soon after the signing of the GATT, the exports may have risked going against the spirit of the Uruguay agreement in an effort to mollify those who criticised the Clinton government for championing the GATT. On January 20, 1995, USDA announcements of Dairy Export Incentive Program (DEIP) allocations of 335.3 million pounds for the first half of 1995 included more than 22,000 tons of first-time allocations for the Asian region, including 15,000 tons of non-fat dry milk, 7000 tons of milkfat and 300 tons of cheese. New Zealand and Australia, which have traditionally supplied the Asian region, strongly protested this vigorous new export wave. The DEIP shipments included 17.8 million pounds of non-fat dry milk to Malaysia, Thailand and the Philippines, and they were reflected in stronger domestic dairy prices for US dairy farmers.[126]

To what extent the US could extend a dairy export offensive around the Pacific Rim is questionable. It depends on: (1) its legality under the GATT/WTO and (2) trade counter-measures or retaliation that New Zealand and Australia might take to maintain their markets in Asia, and that the EU might take to preserve its own traditional markets. International dairy trade appears ready to leap to higher levels of global activity, and it is likely that WTO rulings will affect the outcome of export activity.

Summary and conclusions of Chapter 1

This section discussed the motivation for trade, as it has been perceived since pre-history, and how various governing groups responded to it. The mercantilists' view of trade as a weapon in a zero-sum international competition has given way to an

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[125] *Hoard's* (April 25, 1995): p 311. US dairymen in their National Milk Producers Federation claim NAFTA rules go beyond WTO rules on tariffication, and thus Canada should be importing an additional $1 billion US milk annually. Portraying this as a classic "beggar-thy-neighbor" scenario *Hoard's Dairyman* editors urged US farmers to increase their profits through cost-cutting and higher productivity, rather than trying to overturn Canada's "supply-management" (milk quota) system.

acknowledgement that the wealth of nations can be maximised by free trade according to each nation's comparative advantage; attempts at autarky, irrational protection of infant or strategic industries, overvaluation of currency and neglect of farming and rural development have been repudiated. Since the end of the Cold War, what Bauer called "the spurious consensus" of development economists influences international trade policy less than neo-classical trade theory.

The recent signing of the Uruguay GATT agreement demonstrated a world consensus that free trade benefits all nations in the aggregate, and that IC obstacles (e.g. internal farm supports, export subsidies and unfair tariffs) to LDC agriculture should be phased out by the end of the millennium. Notwithstanding recent reforms in international farm trade, the uncomfortable truth is that a large portion of the world remains in poverty. What Amartya Sen termed "entitlements" to food security are not enjoyed fully by hundreds of millions of people.[127] It is true that in the spirit of free trade, China began liberalising its agriculture in the 1970s, and that India began liberalising its agriculture in the 1990s. But these processes are far from complete, and the fact that grain reserves dwindled for a few years before 1996, as world grain production temporarily lagged behind population, obscures the future of the GATT-1994 accords on grain and dairy trade even further.

William Greider[128] sees evidence that China, with its large market, is in a position to flout GATT/WTO conventions such as the Most-Favoured-Nations (MFN) rule on non-discrimination in trade if it wishes to do so. That is problematic for the world trading system because, as Hoekman & Kostecki say, "MFN is one of the pillars of the GATT."[129] It follows then that If Greider is correct, China could wreck the GATT/WTO early in the next millennium.

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[126] *Hoard's Dairyman* (May 25, 1995) Washington Dairygrams.

[127] Jean Drèze and Amartya Sen, eds. (1990) *The Political Economy of Hunger - Volume 1 - Entitlement and Well-Being*.

[128] William Greider (1997) *One World, Ready or Not*. According to Greider, China's large market is so attractive that potential trading partners could be enticed into bilateral deals violating the MFN principle.

[129] Hoekman & Kostecki (1995) *Political Economy of the World Trading System: From GATT to WTO*.

Complaints that the terms of international trade still favour ICs over LDCs (especially in regard to patents held by IC agribusiness interests, on the biotechnological agents of the Green and White Revolutions) will bring calls for exemptions to "intellectual property" provisions of the GATT, and persuasive calls from LDCs for constraints against agri-business in trade. The "tariffication" of barriers will probably motivate increased dairy trade.[130] International dairy trade is probably headed for on-going battles between the US and Europe in the WTO, over hormones in beef and dairy agriculture[131], and between various competitors over export schemes. Depending upon the clout that the new WTO can exert upon competing dairy exporters, it may be some time before the long-term picture of international dairy trade stabilises.

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[130] It must be borne in mind that expansion of trade in dairy products and livestock is contingent on the containment of natural constraints, i.e. diseases, e.g. BSE, BSE, Chron's disease, Ecoli, Salmonella, TB, etc. - presently a cause of concern. **(See Table 7.)**

[131] Reuter dispatch (via NFU) (January 23, 1996) "Fischler says no backing down on meat hormone" by Peter Blackburn; also many similar references in Kennedy (1993) *Twenty-First Century* (e.g. pages: 279-282) indicating that because of its demographics, Europe will resist the biotech revolution.

Table 6

MOTIVATIONS: factors in expansion of international dairy trade & aid		
MOTIVATOR	EFFECT	LEGACY
Age of Mercantilism (16th-18th Century)	National gov'ts encouraged rationalisations (e.g. enclosures) raising agric. productivity. Peasants became indust. proletariat.	Speeded nationhood. Now repudiated for *zero-sum economics & beggar-thy-neighbor* trade policies.
Adam Smith's *Wealth of Nations* (1776).	Showed *invisible hand* of individual ambition *in free markets* motivated national economic output more than mercantilism.	Attacked as passé by Marxists in Industrial Rev. Rehabilitated by CPE failures of 1970s-90s.
David Ricardo's *Principles* & theory of *comparative advantage* (ca. 1817).	Showed that even if England was more efficient than Spain in *all* production, trading specialities raised output for *both*.	Blunted arguments that national power depended on import tariffs. Inspired free international trade.
Industry forces repeal of English Corn Laws (1846).	British political power shifted from landed gentry to industrialists.	Showed free trade raises nat'l power better than autarky.
Bretton Woods (1944-71~)	Reformed post-WW-II finance & trade relations.	Gold std. left (1971). IMF, WB aid dev't.
ECSC (1951), EEC-6 (1957), EC-12 & Sngl. Eur. Act (1986) EU-15 (1995).	Cut war threat & helped recovery. EEC GDP overshadows Eastbloc in 1970s.	Success spawns *1992 Single Market*, NAFTA pact, etc.
GATT process (1947-94) follows defunct ITO.	Framed int'l trade principles, e.g. MFN. Barred quotas 'cept milk, sugar.	LDCs demand dev't & trade reform in UNCTAD (1964).
USSR joins GATT (ca. 1987). China considers membership.	Debunked bipolar socialist vs. GATT trade blocs.	Most ICs & LDCs accept GATT.
Uruguay GATT agreement ushers in WTO era (1994-)	1992 EC reforms enable WTO to govern ag - to US & Cairns approval.	LDCs, China fear copyr't & patent rules (e.g. biotech).

Table 7

CONSTRAINTS: potential limitations on international dairy aid & trade		
N.B.: Phytosanitary & eco-issues could be misused as nontariff barrriers to trade.		
ISSUE	STATUS	OUTLOOK
Foot & mouth disease (FMD)	Chronic; contained by slaughter & compensation.	Same for foreseeable future.
Brucellosis	Same as above.	Same as above.
Tuberculosis (TB)	Worsening?	Research. Curtail antibiotics misuse?
Chron's disease	Milk-borne link to human Johne's disease?	Same as above.
Rabies	Improving - but endemic worldwide (UK free *via* quarantine). Contained by culling, vaccination.	Vaccinated bait may control in wildlife.
Bovine spongiform encephalopathy (BSE)	Beef link to human CJD? "Mad Cow" disease drops, as human CJD reports rise.	Unknown. Slaughter & compensation, safer rendering needed.
Over-/Misuse of antibiotics	Increasing virulence of many diseases, including most of the above.	Limit over-/misuse & use *different* drugs in animals & humans.
Refrigerants (e.g. CFCs)	Montreal Protocol (1987) CFC ban probably ameliorates greenhouse effect.	Must develop substitutes for CFCs & refrigeration itself.
Bovine somatotropin (BST)	Legal in US (1994) & many non-EU countries.	Bellwether of radical biotech, e.g. cloning.

CHAPTER 2: POST-WW-II ORIGINS OF INTERNATIONAL FOOD & DAIRY AID

Introduction

After tracing the expansion of international food trade in recent centuries, the last chapter examined the tremendous expansion of trade since WW-II and the attempts of less developed countries (LDCs) to make economic progress during the Cold War. This chapter focuses on food and dairy aid programmes which became part and parcel of bilateral (country-to-country) and multilateral (*via* institutions such as FAO and WFP of the UN) initiatives to stimulate development in poor countries.

Just as food aid is a subset of overall international food trade, dairy aid is a subset of overall food aid. Both food and dairy aid are relatively recent phenomena, and dairy aid in particular was not viable until the advent of modern processing technology. Centuries ago, international dairy trade was virtually limited to bulky cheeses, commodities that seldom carried enough value to make their transport profitable. The introduction of fine quality dry milk powder sprayers revolutionised the dairy trade and made the use of milk in aid programmes to remote areas possible.

Although international grain trade reached massive levels around the time of the repeal of the British Corn Laws (1846), large flows of food aid began much more recently. John Shaw and Edward Clay define food aid as, "aid supplied as food commodities on grant or concessional terms."[1] Studies of food aid are divided on its origins. Some historians identify the earliest instances of food aid as small shipments of grain, from the US to friendly governments in South America, a century ago. But regardless of details, all observers agree that it was not until after WW-II that large-scale, global, formally-established systems of food aid began. Dan Morgan remarks that after WW-II:

> dozens of countries that had once fed themselves began to depend on a distant source -

[1] John Shaw & Edward Clay (1993) *World Food Aid: Experiences of Recipients & Donors*: p 1.

the United States - for a substantial part of their food supply.[2]

The US did more than simply dominate commercial trade in grain in this new era. It is no exaggeration to say that the US was progenitor of the means and philosophy of post-war cereals aid. Shaw & Clay write that India, then the largest recipient. but later a net food exporter after the Green Revolution, was the focus of early discussion and that:

Until the early 1960s, food aid was (correctly) seen as almost synonymous with US food aid.[3]

Selections from a review of the literature

This thesis draws from sources with conflicting views on the most salient issues of international dairy aid and trade. Most sources are recognised experts owing to their contribution to academic research or work with institutions such as the FAO, WFP, IFPRI, IMF, World Bank, etc. Hans Singer, Edward Clay, John Shaw, John Cathie *inter alia* are eminent advocates of food aid. As noted in Chapter 1, Peter T. Bauer is a Right-wing iconoclast toward post-WW-II aid and development paradigms, and he is supported by free trade advocate (and scourge of protectionism) Jagdish Bhagwati, as well as Jeffrey Sachs, in his opinion that even in instances where external aid can help development, it is crucial that countries adopt market-oriented policies.

The literature on dairy aid *per se* is not immense, but a significant body of work was inspired by the White Revolution in India, both pro and con, which is a reason why its chief programme Operation Flood (OF) was selected as the case study for this thesis. Sources tending toward acceptance (if not blanket approval) of dairy aid as it has been used in India include Harold Alderman, Peter J. Atkins, John Empson, and John W. Mellor. Among what might be called impartial observers of Operation Flood, Martin Doornbos *et al* of the Indo-Dutch Programme on Development Alternatives (IDPAD) contributed one of the largest bodies of work on OF, and are cited frequently.

Acting as iconoclasts from the Left are Susan George on food aid in general, and Shanti George and Claude Alvarez on Operation Flood in particular. Joining them in a recent (1995) radical indictment of world food systems is Arturo Escobar, noteworthy for the ferocity and scope of his "postmodern" attack on the post-WW-II aid and trade regime. Because the viewpoint of this thesis is that (echoing Bauer, Bhagwati and Sachs) aid

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[2] Dan Morgan (1979) *Merchants of Grain*: p13.

programmes are subordinate to "getting the prices right" for poor countries, this thesis also is concerned with the question of how liberalisation of agricultural development in the GATT process will affect their food security. Thus reference is made to GATT/WTO experts such as Kym Anderson & Rodney Tyers, and Bernard Hoekman & Michel Kostecki.

Also cited is journalist/researcher William Greider who, while accepting most market-oriented principles, joins Paul Kennedy in concern that unfettered capital movements threaten world prosperity and stability. Books by M.V. Kamath on Operation Flood, and Dan Morgan and Anthony Sampson concerned with the grain trade, as well as publications such as *Hoard's Dairyman* (est. 1885) and *The Economist* (est. 1843) were among many sources of valuable information. Historical sources are also cited to establish the weighty role played by food aid in the Cold War.

Reference is made to Geeta Somjee & A.S. Somjee, Dilip R. Shah and others who investigated the microeconomic effects of dairy cooperativisation upon rural dwellers including women, children and tribals in India. But because of space constraints (and the opportunity to pursue empirical evidence on macroeconomic dairy performance in the Agrostat·PC database) this thesis concentrates on the aggregate dairy performance of India relative to other countries, in an attempt to reach some conclusions on the interrelationship between international dairy aid and trade.

Because writers such as Andræ & Beckman, Stephen Hellinger *et al*, Stéphane Jost and John Tarrant point out ways in which food aid systems must be improved, they are important points of reference. Without the reforms suggested by their research (e.g. decentralisation of programmes and the need for "early-warning networks" to speed emergency response), food aid might continue as just a panacea for rich country consciences - instead of timely relief to disasters, and the boon to development that it can be. Now let us turn to a breakdown of the forms food aid has taken in its evolution.

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[3] John Shaw & Edward Clay (1993) *World Food Aid: Experiences of Recipients & Donors*: p 5.

Organisation of food aid

Food aid has generally taken three forms:

(1) Emergency aid: provided on an ad hoc basis for relief of food shortages due to war, drought, flood, disease or other disasters. NGOs such as the CARE, Catholic Relief Services and Oxfam have long been active in emergency food aid.[4]

(2) Programme food aid: began in post-WW-II surplus disposal policies of the US. Later formalised under PL 480, programme aid was granted on a bilateral basis to foreign governments as a gift or on concessional rates. Ideally, it was sold at prices that did not unduly discourage domestic farmers. Its purpose was to displace commercial imports that would otherwise be a macroeconomic burden on the economy in the form of external balance-of-payments problems, or internal inflation. Resources saved in this manner could be reinvested in the economy, eventually "trickling down" into rural development. Such ideal results were not always forthcoming from these "top-down" schemes, and too often programme aid acted as a disincentive to domestic farmers - as it is to Egyptian wheat farmers today. Shaw and Clay say programme aid is "always supplied on a bilateral government-to-government basis."[5] However, as James Ingram, Hans Singer and others continue to urge the use of food aid for "attenuating the costs of structural adjustment programmes" (SAPs) of poor governments, presumably managed by the World Food programme (WFP) on a *multilateral* basis - the precise definition of programme aid seems rather amorphous, and Shaw and Clay acknowledge:

> the division between programme and project food aid has become increasingly blurred.[6]

(3) Project food aid: is a sort of magic bullet aimed to transfer additional nutrition income to target groups such as the rural poor, women and pre-school children, school lunches, and workers in Food-For-Work (FFW) projects, etc.[7] that too often were missed by programme food aid. Principal provider of project aid is the WFP, although

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[4] Shaw & Clay (1993) *World Food Aid*: p 61.

[5] Shaw & Clay (1993): p 2, etc. Commodities were frequently sold on concessionary rates, i.e. "soft loans" often repayable at moderate rates in local currency. In the 1960s the US "forgave" a large amount of such food aid loans payable in Indian rupees on the condition that they were reinvested in Indian development.

[6] Shaw & Clay (1993): p 2.

[7] Shaw & Clay (1993): pp 2, 11-12. Successful FFW projects include road building in Turkey.

other multilateral [8] and NGO efforts are significant. As John Cathie points out, food aid is not limited to commodities, e.g. the NGO Oxfam assisted the FAO in funding 50% of a feed mixing plant five miles from Anand[9], which soon was to become headquarters for India's White Revolution.

In the case of India *project* food aid totally supplanted *programme* aid in 1978, when the last such agreement was signed. India, which had been an early focus of programme aid, next served as a testing ground for project aid. Such project food aid now accounts for about 10% of official development assistance.[10] Ram Saran and Panos Konandreas note that project aid can also alleviate macroeconomic government "foreign exchange burdens" and allow "additional domestic resources" for domestic development[11] just as outmoded programme aid has done. As it gained experience the WFP has concentrated on refining project aid to assist local microeconomic development in schools, health centres and in dairy development, such as Operation Flood in India.

After WW-II, food aid flows began almost entirely as cereals shipments from the US to Europe. Once European recovery was assured, India became one of the main recipients. Cereals will probably always constitute most of the aid basket. Dairy aid took longer to develop. It took time for milk surpluses and technology (e.g. sophisticated powder-spraying techniques developed in Scandinavia) to reach levels where dairy aid became more than a trickle in post-WW-II aid streams. The leading role taken by Europe in dairy aid will be recounted in detail below. But the background of the *overall* post-WW-II trade and aid picture is essential to bring dairy aid into focus.

Susan George and Anderson & Tyers on Population & Poverty

Of prime interest is the question of the interrelationship between trade and aid. Some theorists claim that the use of food aid as enticements or "loss leaders" helped

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[8] *Food Aid Works* and *Food Aid* (1990s) Information and teaching materials from Australian Int. Development Assistance Bureau (AIDAB). Published in Canberra in mid-1990s. Australia provides 50,000 tonnes of wheat annually for FFW projects in Bangladesh, funding tree planting, schools, etc.

[9] M.V.Kamath (1989) *Management Kurien Style*: p 173. Dr. V. Kurien hosted PM Shastri, who inaugurated the plant, on October 31, 1964.

[10] Shaw & Clay (1993) *World Food Aid*: p 61-62. It appears that the late-1970s were a watershed for India which was beginning to enjoy the fruits of food security fostered by the Green Revolution.

precipitate the decline in the terms of trade for the developing world, and even food aid proponent Hans Singer acknowledges instances where food aid has been counterproductive. But Susan George's charge that "the relative and absolute numbers of hungry and destitute people have vastly increased"[12] since the propagation of aid programmes after WW-II is increasingly questionable. Even if she was correct when making the claim, as drought devastated SSA in the 1980s, is the claim still valid?

Thirteen years later, George's charge that the numbers of malnourished people *relative* to total world population[13] is increasing is doubtful. It is difficult to be certain. Also, basic nutritional needs in calories and dietary composition vary among people, occupation and climate. Although reproduction rates have moderated, world population is still growing, and it is possible that the absolute numbers of people living in poverty are increasing. The best albeit hazy estimates to emerge from the World Food Summit held in Rome were of 500 million malnourished people in the world - perhaps 8% to 9% of the world population - an appalling statistic, but rather less than even more alarming estimates.

Be that as it may, Susan George has served as an invaluable gadfly on the shortcomings of international food systems, especially in her warnings that food aid must not be allowed to corrupt Third World agriculture either through common kickbacks to bureaucrats, or skewing a country's technical progress by forcing aid recipients to buy inappropriate technology. All reputable experts join George in pointing out the pitfalls of "tied aid", i.e. food commodities granted on the basis that the recipient reciprocates by buying other goods (e.g. HYV seeds; dairy processing equipment) from the "donor" country. Phillip C. Abbot and F. Desmond McCarthy conclude their study on tied aid:

> Hence one should not assume that aid with conditions attached will benefit a recipient, and even if there is benefit, the real value of the aid to a recipient may well be less than its nominal value.[14]

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[11] Ram Saran & Panos Konandreas (1991) "An Additional Resource? A Global Perspective on Food Aid Flows in Relation to Development Assistance" in Clay & Stokke (1991) *Food Aid Reconsidered*.

[12] Susan George (1984) *Ill Fares the Land.*: p 102

[13] Agrostat/FAO/1994 estimated world population at 5.572 billion people in 1993. Over half the world's population was listed as "low-income" comprising 3.458 billion persons. At the time of the World Food Summit held November 1986 at the FAO in Rome, world population was reported to be 5.7 billion.

[14] Phillip C. Abbot & F. Desmond McCarthy (March 31, 1983) "Potential Welfare Losses Due to Tied Food Aid" in *Canadian Journal Of Agricultural Economics*: pp 45-58, p 57.

Like Susan George, Anderson & Tyers are critical of inequities (*via* rich country food export subsidies, etc.) that have worsened the terms of trade for the Third World.[15] But operating from a standpoint comparatively more accepting of capitalism than George, Anderson & Tyers seek reform of the world trading system through the GATT/WTO, and also blame mistakes by poor country governments for much of their economic malaise. These policies include over-valued exchange rates, over-investment in heavy industry, over-taxation of the rural sector and price controls on domestic produce.

However, like George, they cite aggressive marketing strategies - especially export subsidies and dumping - for Europe's encroachment of developing countries' world market share. Anderson & Tyers' view on the food trade somewhat ignores food aid, probably because they perceive aid as less harmful in trade relations than European subsidies on commercial exports on the world markets, where they gradually displaced Third World (and CAIRNS) competitors. Anderson & Tyers point out that since WW-II, the grey area has widened between commercial sales and outright grants of food commodities with no strings attached. It is ironic that, while Anderson and Tyers share most of Susan George's concerns on Third World development, their remedy is not dismantlement but reform of the GATT - one of the institutions intrinsic to Third World hunger according to George.

The detractors of food aid are correct that post-WW-II aid in grain, etc., had its origins in surplus disposal, and that there have been instances where food aid has served merely as an inducement to later commercial sales[16] Raymond Hopkins (1983) has found that the US and many other countries continue to utilise surplus disposal in food aid programmes.[17] Surplus disposal of EEC dairy aid was the original compulsion behind Operation Flood in India. Martin Doornbos *et al* assess it thus:

> From the donor side, while the compulsion of surplus disposal and the interests of export promotion through aid were certainly the basis of EC dairy aid, other motivation became increasingly important.[18]

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[15] Kym Anderson & Rodney Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*.
[16] Shaw & Clay (1993) *World Food Aid*: ix.
[17] Raymond F. Hopkins (1983) "Food Aid and Development: Evolution of Regime Principles and Practices" in *Report of the WFP*. Hopkins found surplus disposal is employed after bumper harvests in ICs, e.g.: Canada (rapeseed oil), Sweden (wheat), Norway (fish), Germany (egg powder), Australia and Argentina (wheat), Japan (rice) and the US (wheat and many other products).
[18] Doornbos, Gertsch & Terhal (1991) cited in Clay & Stokke *Food Aid Reconsidered*: p 118.

If we imagine ourselves in the role of past policy makers, acting without the benefit of lessons learned since WW-II, the overall story of food aid in general, and dairy aid in particular, is neither so venal nor so simple as its detractors have portrayed it.

Post-WW-II History

There are many reasons why food aid became part of the post-WW-II scene. First and foremost among them is: *because it could.* North American agricultural production had increased during WW-II. Lend Lease, which comprised mostly war materiél, had been cancelled in August 1945, but it was soon apparent that Europe required continued assistance. Fear of communism was intrinsic to US policy but Secretary of State George Marshall carefully played it down, stating:

> Our policy is not directed against any country or doctrine, but against hunger, poverty, desperation and chaos.[19]

Loans and aid for European recovery became known as the Marshall Plan, running from ca. 1947 to the mid-1950s.[20] Much of Western Europe suffered continuing food shortages, as the bad harvest of 1947 preceded a bitterly cold winter.[21] It was not until a decade after the Treaty of Rome established the EEC in 1957 (and owing much to the intensifications of agriculture spurred by Sicco Mansholt) that the EEC regained food self-sufficiency. After WW-II, countries that had lost farm machinery - and labour - in the conflict needed time and assistance, before they could resume normal production.

It would be a mistake to underestimate the power of the US farm lobby in the late 1940s and early 1950s, and this thesis argues that it helped shape US foreign policy. The US farm lobby pressured presidential administrations to keep agriculture off the agenda of the original GATT-1947 negotiations (thus maintaining their protections), and to extend food aid first in European recovery and then in programmes around the world (stabilising US farmgate prices by surplus disposal).

While the country as a whole enjoyed a sense of victory, hearing frequent hubristic assertions of an "American Century", excess farm production amounted to a "farm problem" that was to muddy American political waters for decades. In any event post-

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[19] A.W. DePorte (1986) *Europe Between the Superpowers: the Enduring Balance*: p 135. DePorte cites *The Department of State Bulletin* 16 (June 15, 1947), 1160.
[20] William R. Keylor (1984) *The Twentieth Century World*: p 275.

WW-II euphoria ebbed into a sober realisation that Allied victory had not healed all the hurts of the world. Most ominous were communist movements[22] promising peace and bread and threatening governments such as Greece that the US and Great Britain recognised as legitimate. Against this propaganda the US, (along with Britain and France, still clinging to empire) found itself on the ideological defensive against the socialist world. Churchill's "iron curtain" speech in March 1946 had a long-running effect both on public opinion, and the policies of new President Harry Truman.[23]

On March 12, 1947, the President gave his "Truman Doctrine" speech resolving "to assist free peoples"[24] beyond the western hemisphere, departing from the geographically narrower Monroe Doctrine. This identification of faraway Greece and Turkey with the freedom of American citizens set the rationale for the peacetime use of US military power and materiel around the world. Besides military aid, the US was to help restore, "Livestock, poultry and draft animals..." as well as railways, ports and other infrastructure destroyed by the Germans, and now threatened by Greek communist partisans. In short, the stage was set for programme food aid, i.e. long-running shipments as opposed to short-term disaster relief.

NSC-68: bread and arms to fight the Cold War

At a high-level meeting in early 1950, US leaders produced a top secret document of principles that was to guide Cold War strategy for decades.[25] Earlier complacency over US security had been jarred by the communist victory in China in 1949, and the Kremlin's unexpectedly early development of an atomic bomb. Labelled "NSC 68", the 70-page document was the definitive policy statement on the multi-pronged political, economic and military means deployed by the US in the Cold War.

Although the document reckoned that the US could triple military expenditure without incurring grievous inflation, it realised that the US and its Western allies lacked manpower, materiél and most of all public support to "contain" Russian and Chinese

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[21] Charles L. Mee, Jr. (1984) *The Marshall Plan: The Launching of the Pax Americana*: p 261.
[22] Food was a theme of all parties in the Cold War.
[23] Wolfram F. Hanrieder & Graeme P. Auton (1980) *The Foreign Policy of West Germany, France & Britain*: p 186.
[24] Harry Truman (1947) "The Policy of Containment" in *Public Papers of the Presidents of the United States* pp 176-80.
[25] Dean Acheson (1988) *Present at the Creation: My Years in the State Department*.

revolutionaries by arms alone. NSC 68 described a subtler approach: (1) while maintaining pressure on communist expansion through a diplomatic, trade and military strategy of "containment", (2) "an affirmative programme" of "political and economic measures" would wrest the ideological initiative from the Soviet Union and China :

> by the steady development of the moral and material strength of the free world....[NSC 68 concluded that]...the cold war is a real war in which the survival of the free world is at stake.[26]

The outbreak of the Korean War in the spring of 1950 prompted Truman to sign the steely document that guided the pro-active, military-economic strategies thereafter followed by the US government in concert (usually) with its allies. When NSC 68 was made public, decades later, it was clear that food aid was one of the principal weapons used by the US in the Cold War. Of course, making food aid part of the western arsenal also neatly disposed of the farm surplus problem: Truman could assuage his farmers and fight communism in one fell swoop. And twenty years later, the EEC put a noble front on its not dissimilar efforts at surplus disposal of food mountains, when it became the main provider of dairy aid to India.[27]

PL 480

The detractors of food aid claim accurately that, until 1954 or so, food aid was little more than a glorified surplus disposal policy administered in an erratic, *ad hoc* manner. US food aid sometimes violated the conditions later established by John W. Mellor[28] prescribing "reliable" amounts, administered to minimise disincentives to indigenous farmers and to distribute welfare effects "evenly" through recipient societies.[29] The immediate post-WW-II period of rather erratic shipments was followed by a more formal system of surplus disposal from 1954-66, beginning with the establishment of the PL 480 Food for Peace programme.[30] **(See Table 8.)** Public displeasure at cases where food aid disrupted societies it was supposed to help forced US policy makers to

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[26] Thomas H. Etzold & John Lewis Gaddis (1978) "NSC 68: Strategic Reassessment of 1950" in *Containment: Documents on American Policy and Stategy, 1945-1950*: pp383-441, 438-442. In the original the words "cold war" are not capitalised.

[27] Shaw & Clay (1993) *World Food Aid*: p 21.

[28] Clay & Shaw (1987) *Poverty, Development and Food*: pp 187-88. John W. Mellor's Rx for conditions on donors and recipients of food aid will be referred to throughout this thesis.

[29] Hans Singer, John Wood & Tony Jennings (1987) *Food Aid: The Challenge and the Opportunity*: pp 177-178, 177-192. One classic account of counterproductive food aid is Tony Jackson & T. Eade's (1982) *Against the Grain: The Dilemma of Project Food*

[30] PL 480 is the common term for the Agricultural Trade Development and Assistance Act of 1954.

Table 8

A Brief History of the PL 480 Era

- Spring 1950: President Truman signs NSC-68 after outbreak of the Korean War.
- Establishment of the original PL 480 Food for Peace programme, 1954-66.
- As the complexity of food aid effects (both pro and con) was better understood, the US revised the original PL 480 with a refined "surplus utilisation policy", calculated to raise reliability of shipments and cut disincentives to recipient country agriculture.
- According to Edward Clay, the period from 1971 through the 1980s could be termed a "residual policy" further fine-tuning PL 480 not just to improve welfare effects in recipient countries, but also to minimise costs to the US which was suffering serious budget deficits, partly due to the Vietnam War.
- In 1990 the US completely rewrote PL 480 legislation.[31] Principal changes established direct management responsibilities, new bilateral grant programmes (some using local currencies) and debt forgiveness. A greater delineation was made between agencies responsible for the new PL 480: USDA was to be responsible for Title I and AID was to administer both title II (donations) and the new Title II, the government to government grants programme. Formerly, Titles I/III and II were managed by interagency committees headed by USDA and AID - clearly a troublesome arrangement.

the PL 480 Food for Peace programme, which reformed some (but not all) of the shortcomings of the previous surplus disposal policy.

[31] Title XV of the 1990 Food, Agriculture, Conversion and Trade Act was written by Mark E. Smith, Karen Z. Ackerman and Nydia R. Suarez. The manner in which the US administered food aid remained as before, continuing export credit guarantees (especially for "emerging democracies"), and the Export Enhancement Programme (EEP) - a tool the US employed in its fight against EU encroachment of its world market share was retained. (EEP was a great boon to US dairy farmers.) However, priorities of PL 480 objectives and management were rewritten to emphasise the use of food aid to "promote US foreign policy by enhancing the food security of the developing world." Point 2 made a specific commitment to "promote broad-base, equitable, and sustainable development (including agriculture)" among food aid recipients.

"Problematisation of poverty"

President Harry Truman's deployment of food in the Cold War was not bereft of humanitarian concerns. In a major speech, Truman said that despite a great victory against Nazism many people around the world lived in conditions of hunger and material "misery". Truman's speech went on to portray poverty almost as an engineering problem, such as smashing the atom or building a dam, that could be solved by American ingenuity, resolve and the commitment of resources.

Although it is a mistake to question Truman's humanitarian sentiments, it is now clear that eradicating world hunger and poverty is a fundamentally more complex problem than building an atomic bomb. Critics of western development programmes such as Arturo Escobar mock Truman's "problematisation of poverty" as the epitome of Western hubris - as if the US suddenly awoke, looked around, and realised the rest of the world was there; seeing poverty, the US quickly scribbled a prescription for its eradication, proud of its contribution to the "development discourse". [32]

Drawing mostly from the history of development efforts in Colombia, Escobar argues strongly that, not only was the Western (i.e. First World) response to poverty in the so-called Third World ludicrous in many ways, it was actually harmful to the "development" of poor countries. With hindsight, it is clear that Escobar's analysis of the faults of Western policy is correct on many counts. But its weakness is that he scarcely holds the Second World (i.e. the Eastbloc including the USSR and China) to account for their own meddling in the Third World during the Cold War.

Nevertheless, there is some justification for Escobar's scorn for the arrogant, positivist approach taken by the US and its allies in its "construction" of a poverty-stricken Third World. What Escobar calls the "problematisation of poverty" led to many top-down programmes devised by First World "lords of poverty" and their client Third World "elites" that frustrated rather than aided people's efforts to devise their own solutions to hunger and want. Before returning to Escobar's view on Western development and food aid efforts, a brief overview of Western activities is helpful.

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[32] Arturo Escobar (1995) *Encountering Development: The Making and Unmaking of the Third World*.

Distilling decades of development paradigms

At the end of WW-II, the US led its allies Britain, France and initially the USSR in the establishment of several international institutions which continue to function today. One of these was the GATT. Another, the International Monetary Fund[33] was a global lending institution established at the Bretton Woods conference in July 1944. The IMF was designed to avoid or mitigate future depressions, by acting as the "lender-of-last-resort"[34] - a role borne by Britain before its financial depletion in WW-I. Part of the reason for the new activist foreign policy after WW-II was recognition that the 1930s' Depression and 1940s' world war were partly the result of the US refusal to pick up the financial and military burdens Britain had born before WW-I.

Another institution envisaged at Bretton Woods was the International Trade Organisation (ITO). One of its goals (a forerunner of the similarly doomed New International Economic Order or NIEO) was to stabilise world prices of an array of commodity exports from Africa, Asia and Latin America, to ensure "fair" prices to these producers. In any event, the ITO was scuttled a few years later, when the US Congress rejected the institution as an infringement on US "sovereignty" - the same type of argument heard in Washington and London today, from opponents of GATT/WTO, NAFTA and the CAP.

But scuttling the ITO did not mean an utter dearth of international institutions concerned with countries outside Europe, North America or the USSR. The United Nations was to serve as chief forum for Third World interests, and a number of subordinate bodies were created to put UN policy into effect.

Among bodies that have evolved under the UN is IFAD, the International Fund for Agricultural Development. Chief UN agency concerned with rural poverty, IFAD has approved over 300 development programmes in nearly 100 countries. Although great disagreement remains over many aspects of hunger and economic development, a surprising degree of consensus exists over the relative success or failure of policies

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[33] William R. Keylor (1984) *The Twentieth Century World*: pp 276-77.
[34] Charles P. Kindleberger (1973, 1986) *The World in Depression, 1929-1939*: pp xv, 289.

initiated since aid flows began in earnest after WW-II. According to an IFAD report in 1992:

> For the past 40 years, development thinking has been dominated by a paradigm in which the growth of the overall economy is believed to lead automatically to wealth "trickling down" to the poor. [35]

So extensive was the change in policies from decade to decade, it could be said that there was a post-WW-II succession of development paradigms. IFAD[36] depicts the parade of development polices or paradigms thus:

- **1950-early 1960s:** "emphasised growth alone as defined by the rate of growth of GNP - not GNP per capita, which caught on later."

- **1950s:** Lewis and others "defined the problem as how to achieve growth with an unlimited supply of labour".

- **Early 1960s:** W.W. Rostow argued that traditional societies needed to acquire surplus savings to finance an economic "take-off" into modernity.

- **1980s:** Structural Adjustment Programmes (SAPs) mandated by the IMF and World Bank. The 1980s were a "decade lost to development" in Africa, simultaneously hit by drought, debt and SAPs - endangering human capital. According to Shaw & Clay unanticipated needs in the former-USSR meant, "Food aid is therefore more needed now than it was three decades ago when the WFP first began operations."[37] Hans Singer, sometimes called the father of food aid, certainly agrees with the assessment of IFAD (1992: p 10) that, "food aid is being viewed by recipients as an important source of development finance."[38]

Lana Hall claims that proceeds from PL 480 wheat sold in Brazil were used effectively in supporting indigenous wheat price supports in Brazil. Hall says this increased farmer and consumer welfare in Brazil; the chief downside was displacement of commercial

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[35] IFAD (1992) *IFAD: The State of Rural Poverty: An Inquiry into Its Causes and Consequences*. By Idriss Jazairy, Mohiuddin Alamgir and Theresa Panuccio.
[36] IFAD (1992): *The State of Rural Poverty*: pp 5-25.
[37] Shaw & Clay (1993) *World Food Aid*: p 7)
[38] IFAD (1992).

imports.[39] In contrast, Anne Thomson shows the disincentive effects to farmers, and the sporadic nature of PL 480 wheat shipments to Egypt, until they were doubled in the Carter administration, as a political precondition to Egypt's peace agreement with Israel in 1979.[40] It seems likely that Hans Singer and IFAD would approve of specific PL 480 effects in Brazil more than in Egypt.

More generally, IFAD criticised outmoded western prescriptions that expected all so-called traditional societies to follow the same development path - regardless of their starting point. This notion is particularly galling to critics like Arturo Escobar, with their concern for the sanctity of the cultural heritage of developing countries.

Variants on dominant paradigms

In the section below, citations from IFAD and Harvard economist Jeffrey Sachs demonstrate a marked consensus on what were the variants on the dominant paradigm.

- **1950s and 1960s: "import substitution":** rapid industrialisation with infant industries protected by high tariffs, popular in Latin America, Pakistan, etc.[41] Unfortunately, not only did many of these inefficient industries produce negative value-added[42], but they also sacrificed rural development and exacerbated rural-to-urban migration, which reached 3-4% annually during the 1970s in Brazil, Chile and Colombia, and nearly 4% in Mexico, Peru and Venezuela. Although "mega-cities" such as Calcutta grew in India, the country's relative success in the rural Green and White Revolutions may have mitigated such urban cancer. Countries employing import substitution almost to the point of autarky include China until the 1970s and Albania until recently. (See previous chapter)

- **1960s and 1970s: "export-led growth":** successfully followed by the "Asian tigers" such as Taiwan, Korea (ROK), Singapore, Hong Kong and to some extent, Indonesia and Malaysia. William Greider[43] and Robert Gilpin[44] note that most Asian Tigers

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[39] Lana L. Hall (1980) "Evaluating effects of PL 480 wheat imports on Brazil's grain sector" in *American Journal of Agricultural Economics*, 62: pp 19-28.
[40] Anne Thomson (August, 1985) "Egypt: Food security and food aid" in *Food Policy*: pp 178-186.
[41] Lewis (1968); Dorosh & Valdes (1990).
[42] Soligo & Stern (1965)
[43] William Greider (1997) *One World, Ready or Not: The Manic Logic of Global Capitalism*: p 199.

benefited from US Cold War strategy, which opened American markets to their goods, and supplied them with generous aid of all kinds. IFAD[45] agrees that massive aid helped, although this international institution naturally avoids explicit references to Cold War politics, concentrating on successful policies such as land reform, in its assessment of aid paradigms. Interestingly, most of these "tigers" adopted, led by Japan (the chief US client in the region), capitalist economies. Several were characterised by a strong "overseas-Chinese" business class that was instrumental in their growth and, perhaps, international trade connections. Land reform (along with US aid) was crucial to political stability and rapid economic development in the Republic of Korea and Taiwan.

- **1950s-1980s: "state-led growth":** As mentioned in the previous chapter, Nehru's fixation on central planning in the USSR led to a similar development paradigm in India and the region. The IFAD report notes: "India's second five-year plan was famous for its emphasis on heavy industries under public sector management. Pakistan's second, third and fourth five year plans were [marked by]...a low allocation for agriculture and...the private sector."[46]

In 1978-81 just before the Reaganite-Thatcherite doctrine of privatisation swept the world many countries in "the South" had preponderant public sectors: Algeria (68%), Burma (Myanmar) (61%), Zambia (61%), Bangladesh (41%), Ivory Coast (40%), Ethiopia (37%), India (33%), Pakistan (45%) and Venezuela (36%).[47] The burden of state-led policies upon the rural population is illustrated by the case of Ghana where direct and indirect taxes accounted for nearly two-thirds of value added in the 1970s.[48]

Over time, the negative effect of state-led growth policies became apparent, but fears of rising urban unemployment kept many of them in place. It was not until the early 1990s that Indian Prime Minister Rao began to reverse policy, and privatise some state industries - an important landmark in Third World economic trends.

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[44] Robert Gilpin (1987) *The Political Economy of International Relations*.
[45] IFAD (1992) *The State of Rural Poverty*: p 11.
[46] IFAD (1992): p 11.
[47] World Bank (1983).
[48] IFAD (1992): p 12.

- **1970s: Basic needs:** Jeffrey Sachs writes:

> In the 1960s, the fad at the World Bank and among many donors was "development planning". In the 1970s, this gave way to "basic needs", a doctrine which led the World Bank to back the socialist strategies of soon-to-be bankrupt Tanzania and other non-market economies.[49]

IFAD calls basic needs one of the "challenges to the dominant paradigm"[50] whose assumption that poverty would be ameliorated by top-down growth of GNP was in disrepute. The basic needs approach added some social engineering aspects to earlier approaches that put all their trust in economic growth without regard to distribution. As popularised by the International Labour Organisation (ILO), basic needs plans taxed the rich above certain income levels, and redistributed it in food, clothing, etc. to the poor. It was partly successful in India, where about 3% of rural employment came to be funded by the Employment Guarantee Scheme of Maharashtra in 1984-85. But basic needs plans were not the final answer for any country. According to IFAD:

> For all its merits, this strategy emphasises the consumption needs of the poor, rather than their productivity and their capacity to generate a surplus.[51]

This criticism of the neglect of the productive potential of the rural sector by the "basic needs" school, would be echoed by sources as far apart as ultra-capitalist Jeffrey Sachs and ethnic socialist (for want of a better description) Arturo Escobar. Anderson and Tyers[52] criticise basic needs policies if and when governments set artificially low price controls on domestic sales of food, or allow the rural farm sector to stagnate simply because cheaper food aid is available. Belying their humanitarian priorities, basic needs policies sometimes did more harm than good, by relying upon food aid to meet human needs, instead of correcting root economic problems in defective structures or prices.

Structural Adjustment Programmes (SAPs) in the 1980s

A return to the basics of neoclassical economics (with a reemphasis, at least, upon the importance of minimising both government budget deficits and inflation) became the dominant paradigm of the 1980s. By 1982 many if not most Third World countries

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[49] Jeffrey Sachs (June 29, 1996) "Growth in Africa: it can be done" in *The Economist*: pp 25-27; from Sachs and Andrew Warner "*Sources of Slow Growth in the African Economies*" (February, 1996). Harvard Institute for Economic Development.

[50] IFAD (1992) *The State of Rural Poverty*: p 12.

[51] IFAD (1992): p 12.

could no longer avoid debt problems that had been mounting over the years.[53] The largess that followed the first and second OPEC oil embargoes had spawned billions of petrodollars in loans from OPEC countries to developing nations, and even though many of these loans were on "soft" terms, they added to the already burdensome debt of many. More to the point, the conservative economic philosophies of the Reagan and Thatcher administrations - essentially hostile to socialist planning - had a ripple effect that spread to the World Bank, the IMF and eventually the to UN itself. This culminated in the replacement of Secretary-General Boutros Boutros Ghali of Egypt by Gen. Kofi Annan of Ghana whose management record was more acceptable to the US.

The realisation that decades of top-down, state-managed economic plans had failed, meant that more governments of poor countries were ready to "bite the bullet" when the World Bank and IMF unveiled the painful SAPs they demanded before they would "roll over" these countries' debt. In most instances these involved free market oriented policies, such as privatisation of state-owned industries, downsizing of the civil service and cuts in subsidised services to citizens.

Needless to say, these austerity measures were politically unpopular. But few governments during the 1980s had the will to resist. Many had to adopt SAPs that entailed painful levels of unemployment and underemployment, loss of subsidised food and health programmes for women and children and cutbacks in education. While many LDCs in Latin America and Asia made halting progress Africa seemed in stasis.

Good Governance in the 1990s

The dominant paradigm of the current decade has extended the strict financial accounting of SAPs to political accountability. Jeffrey Sachs writes that frustration with earlier paradigms from "development planning", "basic needs" and 1980s-era "structural adjustment" has led to an insistence by the IMF and World Bank upon government reform in debtor countries. This is not an abandonment of SAPs, but rather an intensification of SAPs, which probably would have been politically impossible to impose before the end of the Cold War.

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[52] Anderson & Tyers (1991) *Global Effects of Liberalizing Trade in Farm Products*: pp 2-4.
[53] IFAD (1992) *The State of Rural Poverty*: p 13.

Sachs says the 1990s' paradigm shift to "good governance"[54] is well intentioned, but remains "deeply flawed." It is too burdensome on poor economies. For example, the World Bank set 111 conditions upon Kenya, before granting a recent loan. Under 1990s-era SAPs, debtor governments are urged to reduce external debt and domestic budget deficits. This is being done through yet more cuts in subsidised services, the imposition of new taxes and user fees and greater transparency in customs administration (thus becoming more receptive to imports) - along with the privatisation of state enterprises and civil service reforms which were already underway.

The IMF's obsession with price stability blinds it to all else, according to Sachs. Poor economies that could be growing at 5% a year, are held to only 1-2% annually because of the bank's unreasonable fear of inflation. Of 53 countries in Africa, only Botswana, Mauritius and Uganda have enjoyed such healthy growth, since the end of the Cold War. In the years 1980-88, Sub-Saharan Africa as a whole suffered with GDP growth of just 1.5% - compared to the healthy GDP growth of 5.7% enjoyed by India, despite its own serious drought in 1987.[55] Although Sachs believes SAPs have a purging effect on some governments, he urged debt relief for the poorest countries to mitigate hunger to the "human capital" of women, children, etc. Fortunately, an interim package of debt relief for several poor countries, in and out of Africa, was agreed in late 1996.

Hans Singer and food aid for SAPs

Before we go on, it is worth noting again that SAPs may rehabilitate the somewhat tarnished role of food aid. Hans Singer continues as figurehead for a group of practitioners (including Shaw and Clay and James Ingram of the WFP) who advocate the use of food aid to ease the plight of poor countries undergoing structural adjustment. Invoking the concept of "additionality"[56] developed in his 1978 WFP study, Singer is in full agreement with John W. Mellor that "donors must supply large amounts", entailing a net supply larger than before aid began - while recipients must give priority to their own farmers and minimise disincentives to them.[57]

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[54] Sachs & Warner (1996) "Sources of Slow Growth in the African Economies" in *The Economist*.
[55] *Economist Book of Vital World Statistics* (1990): pp 44-45.
[56] Hans Singer (1978) WFP study.
[57] Clay & Shaw (1987) *Poverty, Development and Food*: pp 187-88. More on John Mellor's conditions for programme aid below.

In the case of SSA, Singer identified nine different ways that food aid could help ease SAPs.[58] Recognising the danger of food aid, as a disincentive to indigenous farmers, Singer nevertheless claims that, "the real limit is not aid capacity, but absorptive capacity. Further, Singer maintains there is a need:

> for additional food aid, subject to assurance that food aid helps to provide incentives for increased local production and physical and human investment in recipient countries.[59]

The food (obtained from western donors, or triangular transactions from other Third World countries in surplus) can be sold by recipient governments to supplement their budgets, or simply to fight hunger among their citizens. Triangular transactions do evaporate suspicion that food aid is just a cover-up for western surplus disposal; unfortunately, triangular transactions in Africa foundered during the 1980s droughts. Clay and Benson write that, from 1983 to 1988, triangular cereals aid purchases or trilateral exchanges rose from under 500,000 tonnes to nearly 1.2 million tonnes - from 4.5% to 8.9% of total cereals food aid.[60] Triangular, local food aid operations can sometimes be more cost-efficient and timely that aid from the US or EU. However, even today, triangular trade still accounts for the minority of food aid sources although most experts agree world food security could be enhanced by expanding triangular operations among poor countries.

That many debtor countries could utilise assistance seems plain, but always the doubters raise these questions about food aid: *Will aid be a disincentive to local farmers? Will it disrupt previous trade arrangements? Will it create dependence ?*[61] The pitfalls of food aid are in difficult balance with its potential.

Susan George outlines three conflicting paradigms

Susan George[62] identifies three main paradigms of hunger and development: (1) "trickle down" with benefits emanating from entrepreneurs and modernising elites which may correlate to the views of the IMF and World Bank; (2) "dependency theory" of a centre

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[58] Hans Singer (1991) *Food aid & structural adjustment in Sub-Saharan Africa*: p 127.
[59] Hans Singer (1991): p 140.
[60] Edward Clay & Charlotte Benson (February 1990) "Aid for food - Acquisition of commodities in developing countries for food aid in the 1980s", in *Food Policy* : pp 27-43, 39. Several shipments promised by SSA countries (e.g. Zimbabwe to Mozambique) were cancelled due to drought. Their commitments were made up mostly by the US and EEC.
[61] Shaw & Clay (1993) *World Food Aid*: p 1.

(or "core", as Wallerstein would call the US) and periphery of the Third World, that has been consistently exploited since colonial times. As George describes it, dependency theory seems fairly consistent with Arturo Escobar's view of the "development discourse". (3) Beyond the second model lies "class analysis" that appears more Marxist than Escobar's rather anthropological (or postmodern) worldview.

George says that because the NIEO is incomplete, First-Third World relations (in which IC elites support LDC elites, aka compradores) will be characterised by conflict, not harmony. George calls for economic independence and "empowerment" rather than interdependence or integration of LDCs into the global economy. She is not alone in calling for fairer pricing of food commodities through formation of a new international economic order for food. Indeed, a "fair trade" arrangement between companies in the US and Europe and consortia of coffee coops in Latin America and Africa, are helping some small growers.[63] But, prospects for an effective global food cartel (or NIEMO) seem nil when, as William Greider points out, the OPEC oil cartel, a similar organisation (but with far fewer suppliers) "struggles constantly" to enforce production and price controls for oil - a commodity much scarcer than food.[64]

Upshot of the paradigm parade

Summing up the cornucopia of aid and development paradigms from WW-II until the end of the Cold War, and examples of national development plans spawned by them, it seems apparent that, whatever the particular emphasis of each country's economic plan, a common assumption of most planners was that the benefits of centrally-planned, urban-based, heavy industries would "trickle down" through all economic quintiles of their societies, eventually helping even the rural poor. Virtually all these plans could be characterised as "top down". The dominance of this top down philosophy had become thoroughly passé by the 1990s. With its greater emphasis on rural development, including the alleviation of poverty, education and empowerment of women, the new

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[62] Susan George (1984) *Ill Fares the Land*: p 100.

[63] *Economist* (February 1, 1997) "Coffee: green as in greenbacks": p 62. Companies like CaféDirect in the UK, Max Havelaar in Europe and Equal Exchange in the US guarantee a premium over world prices to, e.g. Coocafé, a consortium of small coops in Costa Rica. Fairer prices help growers shift to organic coffee, favoured by customers of the quickly growing chain (8 to 1050 shops in a decade) of Seattle-based Starbucks coffee-houses. N.B. Most trendy customers demand *real milk* in their cappuccinos.

[64] William Greider (1997) *One World, Ready or Not*: p 185.

paradigm might be called "trickle up".[65] This thesis argues that India's White Revolution programme Operation Flood bears such positive "trickle-up" characteristics.

It is my opinion that many countries which suffered under the colonial rule of capitalist European powers, further blamed *laissez-faire* capitalism along with an attendant, inimical imperialism, for their laggard development. This is understandable. Many were influenced by Lenin's identification of imperialism as the last logical stage of capitalism and expected that capitalism would naturally give way to socialism upon national independence. In short, Third World planners generally did not reckon with the variety of capitalistic economies that dotted the world, from near-*laissez faire* US to socially-democratic Sweden, nor did they (or anyone else) apprehend the versatility capitalism could manifest in reforming itself. Up until the fall of the Berlin Wall in 1989 and successive dismantling of the USSR and Eastbloc Comecon countries, such remarks may have seemed extreme. No more. Denis MacShane, a British labour MP and metalworkers union official summed up the post-Cold War outlook:

> For years socialists used to argue among ourselves about what kind of socialism we wanted. The choice of the left is no longer what kind of socialism it wants, but what kind of capitalism it can support.[66]

In any event, the rejection of the capitalist model fostered an over-reliance upon central planning. It could be argued, in hindsight, that this retarded economic growth. However, there is more to development than simple economics. Politics - and development - is the art of the possible. In fact, putting a certain ideological face upon policies, which may in fact be quite different, may be the most politically palatable means to bring about possible development.

Examples that spring to mind include Lenin's adoption of the new Economic Policy (NEP), to boost Russian food production in the 1920s, and Deng Xiaoping's liberalisation of small plot food production in post-Mao China. Both of these market-oriented policies were portrayed as helping to build socialism. In the capitalist camp, examples of socialistic measures portrayed as augmenting capitalistic free enterprise include Franklin Roosevelt's New Deal and John Kennedy's Medicare plan.

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[65] IFAD (1992) *The State of Rural Poverty*: pp 22-23.
[66] William Greider (1997) *One World, Ready or Not*: p 36.

Many developing nations have been criticised for the extent they turned their backs on political and commercial relations with their former colonisers. However, it could equally be argued that a temporary rejection of capitalism, in favour of at least nominal self-reliance on central planning (if not state-led growth) was a valuable periods of nation-building. This may have fulfilled a collective desire to punish foreign companies that were identified with colonialism as infant industries took their place, strengthening national identity and morale. Some economic output was probably lost, but may have been justified by the purging process accorded the political system.

However, the dramatic extent to which this anti-capitalist, anti-foreign trade attitude has evolved is well-illustrated by post-apartheid South Africa, whose President Nelson Mandela has been actively campaigning for the return of foreign direct investment (FDI) by multinationals (MNCs) such as Ford Motor Company. Greider writes that today, developing countries from Malaysia to Paraguay are clamouring for investment from MNCs like Motorola. (In fact, one of Greider's chief concerns is that MNCs are able to blackmail countries into the same sort of concessions, e.g. on labour and tax law, that Third World planners spurned when they exiled such firms, shortly after independence.)

But, whatever the various faces that Third World countries put upon their policies, the ubiquity of one factor in their development equations is remarkable: food aid. The post-WW-II legacy of food aid is, along with Western influence and technical advice in poor country economic planning, excoriated by Arturo Escobar. Let us now turn to Escobar's analysis.

Escobar's radical repudiation of Northern development efforts

Arturo Escobar's book[67] does for post-WW II development *in toto* what Shanti George's eponymous volume[68] did for the Operation Flood dairy programme in India. Although they treat different levels (global versus national), both books are thorough critiques of "First World" development strategy, which had such questionable influence in the "Third World".

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[67] Arturo Escobar (1995) *Encountering Development: The Making and Unmaking of the Third World.*

[68] Shanti George (1985) *Operation Flood.*

While George was concerned primarily with the mismanagement of dairy development in India, Escobar addresses mismanagement of "development" by the First World in the Third World, drawing evidence for his claims from the post-WW II to present experience of Colombia. What distinguishes the approach of Escobar, is his attempt to assess the North's policies in the South in terms of anthropology and postmodernism. Although this approach is not alien to Shanti George's book of a decade before, Escobar goes even further. He argues against the very term "sustainable development".

Like George, Escobar spares no effort in criticising misjudgements of the North (e.g. overlooking the fact that White or Green Revolution programmes founder when the cost of inputs is too high, peasants have inadequate access to credit, or irrigation systems are in disrepair). But it seems to me that such issues (whether in Colombia or elsewhere) are in fact everyday, empirical questions resolvable by "rational decision makers", i.e. peasants fully capable of assessing probable cost-benefit outcomes of new initiatives. Escobar's blanket criticism of the Green Revolution is as flawed as saying tractors are worthless - simply because someone forgot to put oil in the motor. The shortcomings of poor country development invite practical solutions such as the introduction of a Grameen Bank system[69], or the training of tractor mechanics in preventive maintenance, rather than a blanket repudiation of hybrid seeds. On the other hand, Escobar is correct to point out the rational decision making of Colombian peasants' refusal to comply with ill-conceived development schemes, etc. This is reminiscent of the reluctance of Indian small farmers to switch to Friesian cross-breds which as the farmers suspected were maladapted to climate, fodder and disease conditions of India.

Like Shanti George, Escobar properly deplores Northern hubris of the post-WW-II era which discounted the local knowledge and value of the traditional sector of Third World societies attempting to develop into modernity. This was a basic flaw of 1950s' paradigm top-down, capital-reliant models spawned by Arthur Lewis and Walt W.

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[69] Sue Wheat (January 29, 1997) "Banking on a better future" in *The Guardian*. Since the Grameen ("village") Bank was formally established by economist Prof. Mohammad Yunus in 1983, its "micro-financing" has spread to 1.8 m poor borrowers in 22,000 out of 68,000 villages in Bangladesh, lending $30m monthly. When the Grameen concept was discussed at the World Microcredit Summit in Washington, DC, in January 1997, experts warned that NGOs manage microcredit better than the public sector where political elites often co-opt credit. The World Bank estimates a $2.5b portfolio of 16 million borrowers in LDCs.

Rostow. This contrasts with the "new" 1990s paradigm extolling the bottom-up development potential of rural sectors as promulgated by IFAD. As incriminating evidence of the North's blithe disregard for non-western creeds, institutions and philosophies, Escobar cites a 1951 UN document recommending that old relations between these factors must be "scrapped...to pay the full price of economic progress."[70] In other words, to gain modern world status, the Third World must lose its own soul.

Such neglect of Third World culture, and links to traditional agriculture, have now been soundly repudiated by development institutions such as the UN's International Fund for Agricultural Development (IFAD).[71] Four decades of evidence suggest that rural development is necessary not just to bring lower quintiles of Third World societies into so-called modernity, but the evidence also suggests that the overall national economic growth might actually be *led* by rural agriculture and non-farm small manufacturing, services, etc. This may be the best development option for countries that cannot depend on export-led growth (pursued by Korea, Taiwan, etc.) to launch them out of poverty. Escobar appears in agreement with such a "bottom-up" prescription - even though he thoroughly castigates the North's mismanaged efforts at "integrated rural development" in Colombia (where it was known by its Spanish acronym DRI) and elsewhere.

Obviously the North made sweeping errors in its analysis of poorer societies. In many cases it exacerbated economic problems by misdiagnosing them, misprescribing solutions and doing actual harm to suffering economies. As mentioned above, where Escobar goes further than Shanti George, or Edward Said[72] is in his use of anthropological and post-modern analysis of the post-WW-II development era. Escobar employs the jargon of postmodernism, e.g.: *construct, deconstruct, discourse, reconstruct, representation, text,* etc.[73] Unfortunately, Escobar's "poststructuralist" lexicon serves better to obfuscate than illuminate the facts of post-WW-II development history.

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[70] UN Deptartment of Social & Economic Affairs (1951) *Measures for the Economic Development of Underdeveloped Countries*.
[71] IFAD (1992) *The State of Rural Poverty*: pp 5-25.
[72] Edward Said (1993) *Culture and Imperialism*.
[73] Arturo Escobar (1995) *Encountering Development*: p vii).

Escobar is correct that during the structural adjustments of the 1980s, many poor countries suffered negative growth. But in his zeal to apply postmodern analysis to the post-WW-II era, he ignores empirical evidence that important basic indicators, such as life expectancy at birth, infant and maternal mortality, and adult literacy and female literacy have improved measurably in the period 1970-1990.[74] And Escobar invites the question as to whether he might better suggest reforms of the current paradigm of "sustainable development", rather than abandoning such efforts altogether - or just changing the lexicon.

This is not to say that Escobar's approach is totally fruitless. Deconstructing the mindset of the North as it "problematisised" the poverty of the South is empowering for Southern peoples emerging from the chains of a colonialist mindset. Divesting Northerners of false, preening ethnocentrism is equally worthwhile. In Escobar's most promising use of the tools of postmodernism, he invokes James Ferguson. It is useful to quote both Escobar and his citation of Ferguson at length here:

> *The Instrument-Effects of Development Projects*
>
> In his study of the development apparatus in Lesotho, James Ferguson (1990: pp 251-77) retakes [Michel] Foucault's question of the "instrument-effects" of political technologies such as the prison or, in our case, rural development. Ferguson's basic contention is that even if rural development projects in Lesotho were for the most part a failure, their side effects - or better, instrument-effects - nevertheless had far-reaching consequences for the communities involved. Like the prison in Foucault's case - which fails in terms of its explicit objective of reforming the criminal and yet succeeds in producing a normalised, disciplined society - the development apparatus shows remarkable productivity: not only does it contribute to the further entrenchment of the state, it also depoliticises the problems of poverty that it is supposed to solve.[75]
>
> It may be that what is most important about a "development" project is not so much what it fails to do but what it does do...The "instrument-effect," then, is two-fold: alongside the institutional effect of expanding bureaucratic state power is the conceptual or ideological effect of depoliticising both poverty and the state...If the "instrument-effects" of a "development" project end up forming any kind of strategically coherent or intelligible whole, this it: the anti-politics machine.[76]
>
> (James Ferguson 1990. *The Anti-Politics Machine*: p 256)

Foucault's insight into the practical utility of prisons is useful - even if it ignores the empirical fact that citizens generally demand incarceration of criminals, regardless of

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[74] *World Bank Development Report* (1993): pp 300-301; 238-239; 294-295.
[75] Arturo Escobar (1995) *Encountering Development*: p 143.
[76] James Ferguson (1990) *The Anti-Politics Machine: "Development, Depolitization, and Bureaucratic Power in Lesotho*: p 256.

whether or not criminologists insist that the purpose of prison is rehabilitation, not punishment.

Escobar is probably correct that the "instrument-effects" of Integrated Rural Development strategies in Colombia (known by the acronym DRI) succeeded somewhat in depoliticising the economically subordinate position of Colombian peasants to their government, and to the development practitioners from the North. In plain words, this amounts to convincing peasants that their poverty is the result of their social or technical backwardness - not the fault of their government or rich country imperialism. In plainer words, it amounts to "blaming the victim". Escobar argues that this served Northern interests by defusing Colombia's resentment at its subordinate economic and political relationship to the North, while relieving Northern guilt or responsibility for the South's unhappy position.) Escobar makes much of the perception that First- and Third World development matrix entailed role-playing, similar to the construction of a doctor-patient relationship.

But this is not to deny that Colombia suffered economic ills that could be helped by Northern intervention - or at least aid. After all, an egotistical doctor can be just as helpful as an egalitarian doctor during a plague. In fact, this thesis argues that some development programmes such as Operation Flood in India, likely had *positive* "instrument effects". Such development initiatives, whatever the flaws in their design and execution, improved morale of target groups, while suppressing some obstacles to development (e.g. perhaps by removing rent-seeking middlemen from the Indian milk trade, while improving dairy farmer profits and long-term economic security), and generally increased chances that the rural economy improved.

What is most disappointing about Escobar's book is that, after committing page after page to the deconstruction of the *Weltanshauung* and motives behind First World "development" constructs in the Third World, Escobar barely hints at the fundamental reasons why Colombia did not vault into modernity as fast as naive planners hoped in the 1950s. (Escobar ignores empirical evidence suggesting *relative success* in Colombia: according to IFAD, the percentage of the rural population in poverty fell

from 54% in 1965 to 45% in 1980.[77] I suspect the pace of rural development in Colombia would have been even faster, if direct and indirect taxation of the agriculture sector in the 1970s not been as high as 40%.[78] Some might argue that this high tax rate was justified *if* it was levied on foreign- MNC- owned coffee plantations that funnelled profits overseas instead of reinvesting in Colombia. That is a good argument, but it might also be argued that more profits from coffee growing would have been reinvested in Colombia if the tax rate were lower.

Unlike South Korea (ROK) and Taiwan, whose post-WW-II development benefited from land reform (as well as open US markets for their "export led growth") Colombia never underwent meaningful land redistribution. Absence of land reform may well be the most fundamental reason for Colombia's halting, sectorally-skewed progress. Escobar writes that by the second phase of Colombia's development efforts (DRI: 1982-89):

> ...the focus shifted...to commercialisation of peasant food crops...*the surrogate for land redistribution.*"[79]

The implication is that all the stages of Colombia's development programmes including the incorporation and new "visibility" of peasants, women and the environment into what began as a top-down "big push" development strategy were just so much window dressing.

What Escobar admits but does not dwell on is that Colombia's development was still-born because land reform was never achieved. On the contrary, the 1970s in Colombia witnessed, " Increased displacement of the peasantry from their land..."[80] Instead of assigning blame for Colombia's malaise on the lack of land reform, Escobar confuses the development debate, by belabouring flaws in the constructed world-views of the North.

Escobar's book could have been more successful if it had concentrated on Foucault's concept of instrument-effects of the post-WW II aid and development regime. Akin to

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[77] IFAD (1992) *The State of Rural Poverty*: p 6-7.
[78] IFAD (1992): p 10.
[79] Arturo Escobar (1995) *Encountering Development*: p 140.
[80] Arturo Escobar (1995): p 130.

Foucault's examination of prisons, Escobar might better have asked the following questions:

- Was the post-WW-II "problematisation of poverty by the First World simply an attempt to lock the newly-constructed Third World into powerlessness, while it waged Cold War against the socialist Second World?

- To the extent that the North held back the South, were all the instruments of the First World/North equally culpable? What were the roles of the UN, FAO, WFO, UNCTAD & UNICEF, IFAD and other institutions like the World Bank, the IMF, churches and NGOs? Were any heroes among the villains? Does Escobar see any hope for reform of North-South relations in recent admissions by officials in the World Bank[81], IFAD, etc. that many previous programmes were flawed?

- In what ways has the recent Uruguay GATT settlement exacerbated or ameliorated Third World prospects?

Escobar is loath to acknowledge the benefits to Third World agricultural exporters from EU and US cuts to internal farm subsidies and export subsidies that were mandated by GATT-1994. His claim that First World import barriers to Third World commodity imports remain too high is probably correct. Fortunately, GATT-1994 specifies that the tariffs on food imports by even "Fortress Europe" will be gradually lowered in coming years. Published the year after the historic agreement, Escobar's book *Encountering Development* failed to reckon with the most important potential boon to Third World terms of trade in decades.

Escobar is on firmer ground when he criticises the harm that the multi-fibre agreement (MFA) does to textile exporters like Bangladesh. Even free marketeers like Jeffrey Sachs advocate special tariff reductions for the poorest exporters in Africa and elsewhere, through extension of agreements like the MFA and Lomé Conventions.[82]

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[81] Geoffrey Lamb, head of UK branch of the World Bank, freely admitted to past mistakes, in a talk at Durham University Geography Dept. in 1994. But Lamb (just days before a debate with Susan George at the London School of Economics) restated that the World Bank could positively affect poor country development, and resolved to improve Bank performance in future.

[82] Jeffrey Sachs (June 29, 1996) *Economist*: pp 25-27.

As was discussed in the section on biotechnology and TRIPs in Chapter 1, Escobar's wariness over First World intellectual and patent rights on new hybrid seeds, etc., under new GATT/WTO rules may have some basis. Clearly, agribusiness should be a focus of GATT/WTO monitoring to ensure that Northern biotech does not subtract from Southern development. But on the whole, *Encountering Development* misses such real-world caveats. Escobar prefaces his book, by explaining that:

> it grew out of a sense of puzzlement that for many years the industrialised nations of North America and Europe were supposed to be the indubitable models for the societies of Asia, Africa and Latin America, the so-called Third World, and that those societies must catch up with the industrialised countries, perhaps even become like them.

This 1940s-vintage paradigm is now as outdated as the idea that the sun revolves around the earth. It is a paper tiger, a straw man, demolished by Escobar as effortlessly as some of the mistaken practices (e.g. the use of frail Northern cattle breeds unsuited to hostile Southern climes) exposed by Shanti George in *Operation Flood*. As noted above, even the World Bank admits to many failures, e.g. environmentally harmful dams and other misplaced infrastructure projects.[83] But Escobar's tirades on the semiotics of terms like "Third World" and "sustainable development" in Latin America, seem irrelevant in the context of rising growth - with equitable distribution - in many Asian economies. He seeks more to assign blame than to uncover solutions - surely a destructive approach. What brings ultimate consternation with Escobar is his admission that that, "there are no grand alternatives"[84] to the present paradigm of sustainable development. Nor does he see an alternative to Castells and Laserna's assertion that the answer to Third World stasis is:

> ...a policy capable of articulating social reform with technological modernisation in the context of democracy and competitive participation in the world economy.[85]

Furthermore, Escobar admits to widespread desire for the fruits of modernity (e.g. improved communications) among people in the South. Not only do indigenous people avail themselves of its information and entertainment, but it can also be put to practical use. Escobar is forced to admit that "cyberculture" has, ironically, helped some Indians stave off commercial encroachment in the Amazon rain forest.

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[83] Geoffrey Lamb (1994) Of the World Bank, in aforementioned talk at Durham University.
[84] Arturo Escobar (1995) *Encountering Development*: p 222.
[85] Castells and Laserna (1989): p 16.

Escobar's next book would be more fruitful if it explored such examples of "hybrid cultures and postdevelopment" introduced late in this book.[86] That process is already in full swing. It is the natural state of humanity. Just as the Third World has accepted transistor radios (invented in the First World, developed and marketed from Asia), the First World increasingly accepts Third World foods (curries, salsas, etc.), fashions (clothes, dance and music) and new technology (e.g. the Walkman from Japan; banking computer software, and patents in two-stroke engine design from India). In fact the new mini-car from German-Anglo firm Rover will be built in Britain - with motors from South America.[87] It makes less and less sense to talk about First, Second and Third Worlds in such a dynamic international trading milieu. As William Greider points out it is increasingly international capital (not governments) that determines where and how development takes place, under present GATT/WTO rules.[88]

Summing up Escobar's analysis

In *Encountering Development* Escobar introduced Foucaultian analysis to the succession of post-WW II development paradigms. He deconstructs the First World's development apparatus as freely as an anthropologist analyses a "primitive" society far from the metropole (but he does not even intimate that development in the so-called rich countries of Europe and North America has also come at a cost to tradition and cultural heritage). Escobar breaks no new ground when he argues that the First World/North/core dominates the Third World/South/periphery. Nor does he prove that the "instrument-effects" of the development regime, including food aid, are either consciously planned, ill-intentioned - or always harmful to development.

One hopes that, given the new post-Uruguay GATT world, Escobar will switch his attention from the mistakes of the last four decades, to critiquing the articles of the Uruguay accords, and monitoring the judgements of the WTO.

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[86] Arturo Escobar (1995) *Encountering Development*: pp 217-222.
[87] BBC Radio 2 (October 1, 1996).
[88] William Greider (1997) *One World, Ready or Not*: pp 256-265, 257. Greider is persuasive in his portrayal of the subordination of MNCs such as GM and IBM - and even governments - to uninhibited capital movements permitted by the GATT/WTO. But Grieder says that if governments acted in concert they could improve their situation. Few economists believe international ought to be as strictly controlled as it was in the 1950s and 1960s, but there is scope for reforms under the WTO, e.g. a minuscule "exit-

Because Escobar is too narrow in his approach to development issues, his analysis is unduly pessimistic. This thesis expects that truly fair trade (along with the outlawing of unfair labour practises and, perhaps, scurrilous manipulation of capital flows) - would assist construction of an equitable hybrid world culture that enriches the poor along with the rich. Of course the road to development will not be smooth for many poor countries, just as it was not smooth for others in the past.

Because Arturo Escobar's critique of post-WW-II development efforts is so utterly disdainful, it is apt to elicit the maximum amount of consensus from those who have been let down by the institutions of development. Because Escobar carries the banner for such widespread disgruntlement, this thesis is forced to respond to his analysis.

In the end, Escobar's viewpoint offers little of concrete value to the nuts and bolts practicalities of dairy development. Faced with a real world choice between, say buying high-tech refrigerated railway cars for milk transport to city dairies, or medium-tech feeder plants for local processing of milk, Escobar seems likely to postpone the decision while brooding on the Western fixation on stainless steel equipment, instead.

The useful critiques of Cathie, Clay & Stokke, Marchione, Hellinger and others

While Cathie's arguments for "untied financial aid" are persuasive in some respects, they may be impractical for several reasons overall[89]. Cathie is certainly correct that food aid can interfere with recipient country agriculture. However, rich country food surpluses were a fact of Cold War politics, and the art of the matter was to dispose of this aid *in kind* in as utilitarian a manner as possible. This is not to say that Cathie's analysis of the shortcomings of food aid was not valuable. If his suggestions were faithfully executed, Third World growth would reach "take off" in short order. However, the likelihood is that cash aid is even more apt than commodity aid to be misdirected, except in the best of conditions and controls.

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and-entry toll" (p 257) of far less than 1% as proposed by Yale economist James Tobin, to act as a moderator on sudden capital flight as seen recently in Mexico.

[89] John Cathie (1982) *The Political Economy of Food Aid*.

On the other hand, the truths pointed out by Cathie (or food aid practitioners of his knowledge and influence) have spawned reform of food aid institutions. It was not long after the publication of Cathie's piece that the WFP reacted to the faults of many long-term programmes, by switching its emphasis to emergency disaster and refugee relief.

Clay & Stokke agree with Cathie that aid "tied to procurement in the donor country"[90] can compound the negative effects on the overall economies of recipient countries. Doornbos *et al* acknowledge that EEC dairy aid to Operation Flood might *possibly* be some evidence that purchases of equipment from Europe are tied to dairy aid.[91] But M.V. Kamath indicates the high degree of autonomy used by OF officials in selecting equipment for the programme.: Kamath writes that early aid from New Zealand came with "no strings"[92], and that Denmark provided India with the world's first SMP dryer for buffalo milk - thus raising potential for Indian dairy self-sufficiency. In brief, although this thesis is aware of some government and commercial attempts to sway Indian dairy policies in their own favour, there is little evidence that tied-aid arrangements held back India's dairy economy. On the contrary; diligent OF officials usually drove a hard bargain in favour of their country. Operation Flood manager Dr. V. Kurien in fact claimed that it was possible to manufacture all processing equipment in India.[93] M.V. Kamath notes that Operation Flood was responsible for the flowering of several domestic companies to produce and install dairy plants, and as for cattle feed plants, he writes:

> Indeed, the import content in total machinery value of cattle feed plants was reduced from 100% in 1965 to zero in 1980!

The same cannot be easily said about the role of wheat and attendant purchases of milling machinery in Nigeria.[94] Thus on at least some development counts, OF measures up rather well - in this case generating vertical linkages, all the way from rural producers to the makers of capital-intensive urban-biased milk processing equipment in India.

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[90] Clay & Stokke (1991) *Food Aid Reconsidered*: p 6, pp 1-36.
[91] Martin Doornbos *et al* (1990) *Dairy Aid and Development*: p 71.
[92] M.V. Kamath (1989) *Management Kurien-Style: the Story of the White Revolution*: p 95.
[93] M.V. Kamath (1989): pp 168, 321. Other sources have conjectured that Indian manufacturers copied imports, with scant regard for patent law.
[94] Gunilla Andræ & Björn Beckman (1985) *The Wheat Trap: Bread and Underdevelopment in Nigeria*. This book strengthens my opinion that although it was a stroke of convenience (owing to the EEC butter mountain), Operation Flood was designed from the outset to avoid mistakes made in other food aid programmes that were just polite terms for surplus disposal.

Returning to the subject of types of aid, certainly cash aid increases recipient autonomy in selecting appropriate technology or food commodities for use in development. But, Cathie's suggestion that cash aid is superior to food aid may be naive. Cash would interfere with domestic farming less than food aid, but there is a greater chance that cash aid could be lost to recipient government corruption. This viewpoint is seconded by Hellinger *et al*[95] who warn that too much aid can skew development of LDCs whose governments lack capacity "to absorb" it. Hellinger prefers small, tailored doses of aid, preferably administered by on-the-ground NGOs, rather than "top-down" large-scale programmes characteristic of the World Bank's McNamara era (1968-81)."[96]

The sensitive issue of corruption began to be seriously (if indirectly) addressed during the 1980s. Then the IMF and World bank mandated structural adjustment programmes (SAPS) upon many LDC governments as a precondition for "rolling over" debts which were in arrears. Marchione[97] agrees that SAPs stimulated some needed government fiscal reforms, but he maintains that *net deficit* of currency flows from African debtor nations establishes the case for debt relief. Jeffrey Sachs is one of many agreeing with Marchione that the necessary but bitter medicine of SAPs should be followed by a panacea of debt relief.[98] Fortunately, progress toward LDC debt relief was made by the G-7 in the summer of 1996.

In contrast to Africa, it must be said that India (especially in the post-Indira Ghandi era) has already profited more from SAP-like reforms (e.g. lowering budget deficits and inflation; cutting subsidies to state industries), and is better placed to take part in world trade. Partly because India further liberalised its economy under Rao, it can do without the debt relief accorded poorer nations. Unlike poorer nations such as Bangladesh, India is more autonomous in its development course - partly because India is (by most definitions) now a net food exporter. Aid programmes play a smaller part in India's

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[95] Stephen Hellinger, Douglas Hellinger & Fred M. O'Regan (1988) *Aid for Just Development: Report on the Future of Foreign Assistance.*

[96] Stephen Hellinger (1981): p 25. Hellinger argues persuasively on behalf of NGOs like his own - the Development GAP

[97] Thomas J. Marchione (March, 1996) "The right to food in the post-Cold War era" in *Food Policy.* Marchione was on sabbatical from USAID when this was written for a special issue on nutrition and human rights.

economy than in many LLDCs. India now has less concern for the illicit largess frittered away from large top-down aid programmes typical of the past, than the persistent, endemic corruption, that continues to sap all levels of its economy.

On balance, the outlook for India is not unduly pessimistic. All societies have problems; most problems are susceptible to reform. Thirty years ago, the US suffered corruption (endemic in regional and city governments, e.g. Tennessee and Chicago) of the kind that still afflicts politics in India. Today the US situation is not perfect, but much improved. The increasing vibrancy of Indian democratic politics (with BJP and other parties currently prevailing against the long-ensconced Congress Party) could continue to weed out corruption and strengthen government institutions. Also, compared to the famine scares[99] and of the 1960s, the outlook for India has improved.

Much of Sub-Saharan Africa (SSA) was left with less infrastructure (e.g. roads, civil service), and more aversion to liberalised domestic markets and free foreign trade, compared to India. Jeffrey Sachs says debt relief that helped Germany (1953) and Indonesia (1969), and recently extended to Egypt, Poland, etc. - now should be extended to SSA. On top of debt relief, Sachs urges America, Europe and Japan to make a "New Compact for Africa", involving road-building programmes and "guaranteeing open markets for African exports" in Lomé-like concessions to "help reintegrate Africa into the world economy."[100]

As he implores donors to bolster science and technology (especially in public health and agro-industry), Sachs sounds firmly on the side of Right-wing development theorists such as Peter Bauer who contend that cash crops (not the "basic needs" doctrine of now-bankrupt Tanzania) are the way forward for the poorest countries. But given current economic problems the opinion is being voiced loudly from Hans Singer and other sources that SAPs are in danger of sacrificing too much of the "human capital" in developing debtor countries, and that food aid, at least should be deployed to safeguard the nutrition and health of their populations.

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[98] Jeffrey Sachs in "Growth in Africa: it can be done" June 29, 1996 *Economist*: pp 25-27. Sachs, the architcect of economic liberalisation in the ex-USSR, was invited to write this article on on Africa.

[99] Paul Ehrlich (1968) *The Population Bomb*. This book caused much alarm. It did not reckon with demographic patterns in which birth rates generally decline as societies develop.

[100] Jeffrey Sachs (June 29, 1996) *Economist*.

It is understandable that it has taken decades for former colonies (both inside and outside Africa) to disentangle the resentments of a colonial past from economic truths. Autarky is dead; long live free trade. Countries like India coming to grips with the reality of the post-Uruguay GATT era, appear to be on the growth path at last. Jeffrey Sachs is not the only writer to believe that Africa need not be far behind.

Agrostat/FAO & aspects of food aid statistics

Edward Clay's 1983 article referred to above was complimentary on the *reliability* of EC dairy aid shipments, over time, one of the demands made on donors by John Mellor[101] In-line with his general critique of food aid, Cathie's appreciation was grudging, but measured:

> The EC commitment since 1980 of 1.65 million tonnes is shared between the bilateral aid programmes of member states (730,000 tonnes) and the programme of 'Community Action' organized by the Commission (920,000 t). The Commission also administers virtually all dairy aid. Informal administrative practice has fixed commodity commitments since 1978 at 150,000 t of SMP & 45,000 t of butter oil. These levels have no developmental rationale, but represent an approximate balance of processed dairy products in terms of fresh milk equivalent earmarked for export as aid. Such practice is, however, more satisfactory than commitments fluctuating with the short-run surplus position.[102]

Of course, the need to avoid the damaging effects on recipient countries of erratic food aid donations was one of the early lessons learned by aid practitioners back in the 1950s. It can be useful to compare the baseline EC commitments to the figures recorded in the Agrostat·PC 1994 database. The statistics from Agrostat presented in Table 9 are consistent with Cathie's 1983 figures on EEC (*aka* EC) commitments. It is true that the EC-India dairy aid deliveries are smaller than might be expected from the fact that EC butter mountain was such an awkward problem, before the 1984 imposition of European milk quotas. Possible explanations for the downward statistical discrepancy include: (1) the possibility that EC milk surplus predictions were too high, (2) that other recipients required emergency dairy aid, or (3) that the Agrostat statistics are slightly inaccurate.

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[101] John W. Mellor (1987) in Clay & Shaw, *Poverty, Development and Food*: pp 187-88. John Mellor (IFPRI, Wash. DC) said donors must: (1) "provide *reliable* amounts", (2) "provide *large* amounts" and (3) "recognise the conditions of effective aid." Mellor says recipients must: (1) give priority to *agricultural* development...to minimise the disincentive effects of food aid"; and (2) "pursue policies that spread capital supplies as evenly as possible over the labour force." Mellor's prescription for healthy food aid programmes has informed my investigation of the topic.

Table 9

EEC dairy aid commitments & deliveries to India 1978-83		
Period & Commodity	EC Commitment	Agrostat/94 data
1978-80 SMP	150,000 MT	134,934 MT (mean)
1978-83 SMP	same as above	129,634 MT
1978-80 BO	45,000 t	39,756 MT
1978-83 BO	same as above	37,294 MT

Source: Agrostat/FAO/1994

These figures remind us that planning such large-scale food aid flows is no simple matter. As Stéphane Jost points out, monitoring agencies such as GIEWS and INTERFAIS need to be improved, to better anticipate shortfalls and ensure that food aid reaches those who need it promptly.[103]

Jost reflects the view of this thesis that food aid statistics should be rationalised under unified, simplified rules. Jost cites three principal aspects that could benefit from simplification: (a) the calendar year for records (calendar, fiscal, split or marketing year?), (b) conversion factors (e.g. rough rice or milled rice), (c) date of record (i.e. on date of pledge or delivery?). In closing, Jost proposes that the WFP and FAO oversee collaboration on food aid statistics, in order to develop a database that is usable world-wide, and to avoid duplication of effort.[104] (Not to mention occasional double-entering of food aid donations that benefits donor prestige but not recipients.)

In my own estimation, prospects of statistics reform are favourable because: (1) it is a necessary precaution as world food trade enters the post-Uruguay GATT era; (2) the 1984 expansion of the African database into INTERFAIS offers a successful precedent; (3) MNCs and TNCs currently are engaged in developing internationally-recognised accounting systems for businesses, and this concept can be expected to spread from business to the aid community; (4) continued use of GIS and comparison of trade figures from ever more countries is bound to reveal discrepancies in present records,

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[102] Edward Clay (August 1983) "Is European food aid reformable?" in *Food Policy*: p 175.

[103] Stéphane Jost (1991) "An Introduction to the Sources of Data for Food Aid Analysis with Special Reference to Sub-Saharan Africa" in Clay & Stokke (1991) ": pp 191-201. GIEWS: Global Information & Early Warning System; INTERFAIS: International Food Aid Information System (WFP).

and hopefully result in more transparent statistics that better guard food security for all the world's people. At the same time, it is heartening to realise that whatever the origins and motivations of the post-WW-II food and dairy aid regime, donors have tried to improve their performance.

John Tarrant's view on food aid

Although John Tarrant's 1985 paper could not anticipate all aspects of the mid-1990s Uruguay GATT agreement, several of his points apply to the current situation, as emerging economies such as China pass economic thresholds where their consumption patterns become more demanding on world food supplies.

The "irony of development"[105] is that rising income in LDCs (e.g. income elasticity of demand for food in India is 0.80 - compared to 0.15 in the US and UK) can exacerbate food shortages, due to (1) increased demand for food and (2) rising demand for products high on the food chain, e.g. poultry and meat, which increases cereals demand. This concept is not new (Greens repeat it daily), and is reflected dramatically by changing demand patterns in today's more prosperous China.

Citing Sen (1981) on famines in Ethiopia and Bangladesh, Tarrant writes:

> Food self-sufficiency is widely misunderstood....at least as it is defined by most governments. It is important to make a distinction between imports which result from failure of domestic supply to meet *commercial* demand for food and the total *need* for food by the population.[106]

Tarrant's reiteration of this truth is valuable. (And echoes Amartya Sen's point that a good harvest means little to a starving person if (s)he has no "entitlement" to a share of it.) Terming a country self-sufficient in food simply because it exports more food than it imports can be just as disingenuous as lowering official unemployment statistics, when the jobless become so discouraged that they stop actively seeking work.

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[104] Stéphane Jost (1991) in Clay & Stokke (1991): pp 199-201.
[105] John Tarrant (1985) "A review of international food trade" *PIHG* 9: pp 235-254, 237.
[106] John Tarrant (1985): p 248.

Gunilla Andræ & Björn Beckman on dangers of food "aid"

Some points in Gunilla Andræ & Björn Beckman's[107] book tally with and reinforce this thesis' analysis of Operation Flood in India. In fact, what they call the Wheat Trap in Nigeria would perfectly reflect Operation Flood in India if input-dependent dairying using Holstein-Friesians, instead of indigenous Zebu cattle and buffalo had not prevailed. Andrææ & Beckman decry cheap North American wheat imports and food aid as contributing to "underdevelopment" in Nigeria - and this it would have been in India, had not dairy leaders not "monetised" imported dairy aid to invest in needed infrastructure.

Andræ & Beckman call wheat "a commodity that cannot be effectively produced domestically." The authors point out that wheat is the only major crop that cannot be grown in Nigeria's rainy season, and thus has become a *raison d'être* for capital-intensive irrigation projects, as well as the western-devised technology of flour mills in the new "forward linkages" of the new Nigerian wheat economy." [108]

In her critique of the White Revolution in India, *Operation Flood* (1985)[109], Shanti George used arguments paralleling those of Andræ & Beckman on wheat in Nigeria. George deplores reliance on Friesian cross-breds dependent on concentrates and speciality fodder that, in turn, increased reliance upon the products of Western agribusiness, e.g. pumps in irrigation, or imported processing machinery. Against the argument of inappropriate technology in the "forward linkages" of milk production in India, are contentions by OF director Verghese Kurien, that most if not all equipment used in the programme is, or can be, manufactured in India.[110]

Andræ & Beckman admit that for centuries wheat had significance in "festive occasions"[111], and while a speciality food, was by no means foreign to Nigeria's culture. Similarly, Shanti George acknowledges that milk is part of India's heritage. Both critics decry reliance upon western technology in "forward linkages", such as flour

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[107] Gunilla Andræ & Björn Beckman (1985) *The Wheat Trap*: p 143-144.
[108] Gunilla Andræ & Björn Beckman (1985): PP 144, 180.
[109] Shanti George (1985) *Operation Flood*.
[110] NDDB (1990) *Proceedings: International Seminar on Dairying as an Instrument for Progress: the Indian Experience*.
[111] Andræ & Beckman (1985): p 79.

milling. However, there are crucial differences between the two situations of importance to this thesis.

Given the present state of irrigation and growing patterns in Nigeria, major wheat imports are likely to continue. Now that the Nigerian taste for wheat has been *intensified* (i.e. become more inelastic), future wheat shortages are likely to worsen the Nigerian trade balance. Nigeria's net wheat imports were 847 thousand Metric tons (MT) in 1992, compared to just 100 thousand MT in 1961. In the period 1961-1992 Nigeria's highest domestic wheat production was 60 thousand MT in 1989 - minuscule compared to an import high of 1444 thousand MT wheat imports in 1985.[112]. Low Nigerian wheat imports were 40 thousand MT in 1964. Exponential growth of Nigeria's "wheat" imports was *positive* 1961-92, at 3.6%. It is this scale of foreign food dependence that India succeeded in escaping.

In the early 1990s, EU dairy aid to India virtually halted. India's net imports of "milk ex. butter" imports were 267 thousand Metric Tonnes (MT) in 1992, compared to almost double imports of 462 thousand MT in 1961. (Low Indian "milk ex. butter" imports was only 8 thousand MT in 1964.)

In the period 1961-1992 India's highest domestic "milk ex. butter" production was 60,850 thousand MT in 1992 - more than three-times larger than "milk ex. butter" domestic production in 1961. Domestic production was gigantic compared to an import high of just 683 thousand MT "milk ex. butter" in 1982. (Exponential growth of India's "milk ex. butter" imports was *negative* 1961-92, at -5.1%.)[113]

Apparently, Operation Flood has been successful at: (1) keeping intact and strengthening "backward linkages" to rural producers, by improving infrastructure through the National Milk Grid, etc.; (2) increasing urban consumers' inelasticity of demand for milk, resulting not only in higher incomes for rural milk producers, but greater potential credit-worthiness as well; and (3) not leaving urban milk consumption dependent upon imported commodities (e.g. SMP) whose price volatility could endanger India's foreign exchange reserves. These articles offer evidence that, when

[112] Agrostat/1994/FAO.

compared to Green Revolution practises in Nigeria, the management of the White Revolution in India has avoided the underdevelopment trap, entailing probable aggregate *and* widely-distributed gains from Operation Flood.

Harsh lessons about food aid since WW-II

Recognition that large-scale programme or project food aid can disrupt poor economies has caused the WFP to reverse the traditional 2:1 menu of its activities of 2/3 programme/project aid-to-1/3 emergency aid. Since about 1990, about two-thirds of WFP shipments are now allotted to emergency relief, and remaining food programmes are monitored more closely in order to avoid disincentive effects in recipient countries. To an extent, this reversal of policy emphasis reflects success in WFP activities, in that improvements in food security in India and other countries have lessened the call for programme aid.

Meanwhile, there continues to be universal support for emergency food relief efforts (reminiscent of post-WW-II aid to Europe) as seen recently in Bosnia, Eritrea, Ethiopia and Somalia. Support remains strong despite tragic anomalies. Many problems stem from bureaucratic inertia (rectifiable through decentralisation as Hellinger argues) or inadequate information systems (as Jost argues for the improvement of GIEWS and INTERFAIS). If Hellinger's suggestion that field personnel and NGOs are granted greater responsibility is followed, it is also likely that information about local conditions and food supplies will be more accurate, thus speeding deployment of all shipments, and avoiding price disincentives to local farmers.

All-too-recent events have demonstrated the need for improvements. For instance: (1) It is now known that as thousands starved during the mid-1980s drought and civil war in Ethiopia, warehouses of hidden stockpiles of food were being shipped out of Ethiopia in commercial sales - once again underscoring the principle acknowledged by Michael Glantz among many others that famine is a problem of politics and distribution, not production[114]; (2) US food aid to Somalia arrived just as a better harvest reached the market - a textbook example of disincentives to indigenous agriculture. The Somalia

[113] Agrostat/1994/ FAO.

case also supports Jost's reminder that timely data is needed to accelerate WFP performance through "early warning systems", etc.

Meanwhile, Hans Singer, James Ingram, Edward Clay, John Shaw and John W. Mellor make convincing arguments for the expanded use of "monetised" food aid to ameliorate the effects of SAPs on developing economies.

Conclusion of Chapter 2

It is the viewpoint of this thesis that where food aid has been unsuccessful, its delivery was erratic or poorly timed and acted as disincentives to local farmers. (Or control of aid may have been lost to unauthorised groups, as happened in Afghanistan, Somalia, etc.) However, this thesis argues that EEC dairy aid in Operation Flood generally avoided these pitfalls. To support these contentions Chapter 3 compares the dairy production and consumption of India to other countries from the 1960s to the 1990s , in a series of charts and world maps. Chapter 4, following, focuses on Operation Flood.

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[114] Personal communication: Dr. Michael Glantz of the National Center for Atmospheric Research (NCAR) in Colorado. Dr. Glantz made this point to me during an interview at the November 7-10, 1988 UN (CSTD) World Congress on Climate and Development in Hamburg.

TABLE 10

Landmarks in food aid & development

- 1954: US reorganises its bilateral food aid doanations with PL 480.
- Till early 1960s: food aid synonymous with US food aid.
- 1956-76: US 59m tonnes programme food aid to India (1993 value = $4.8 b).
- 1961: World Food Programme (WFP) created as multilateral food aid agency.
- 1967: Food Aid Convention (FAC) consolidates donor commitments.
- ca. 1968: Indian famine in Rajasthan.
- 1969-81: Afghanistan receives dairy assistance from WFP. Plans for "monetised" dairy aid dropped due to poor project control.
- ca. 1970-71: Nigerian Civil War and famine in Biafra.
- 1971 (independence) to late-1970s: food aid critical in Bangladesh.
- November 1974: UN World Food Conference called for improved food policy. Minimum target of 10 million tons of cereals annually set. WFP was restructured, creating a Committee on Food Aid (CFA) to govern the WFP. Goal is to co-ordinate multilateral, bilateral and NGO aid programmes. The CFA became "world focus for discussion on all aspects of food aid." (James Ingram in Shaw & Clay (1993) *World Food Aid*: p x)
- August, 1982: Mexico cannot service debt, triggering Third World debt crisis.
- 1987: India withstands worst drought this century in all regions.
- 1988: Increased rice production brings Bangladesh close to self-sufficiency.
- 1988: dairy products comprise ca. 340 thousand tonnes total food aid.
- 1989: dairy products comprise ca. 156 thousand tonnes aid.
- 1990: dairy products comprise ca. 137 thousand tonnes aid
- 1991: dairy products comprise ca. 234 thousand tonnes aid.
- Early-1990s: ex-Eastbloc receives more food aid than Africa. But Gulf War-spawned oil price rises increase need for food aid in India, etc.

CHAPTER 3: DAIRY PERFORMANCE OF INDIA & OTHER COUNTRIES FROM THE 1960s TO THE 1990s

Introduction

In previous chapters we examined the broad sweep of international agricultural trade, and the symbiotic evolutions of post-WW-II trade and aid regimes during the Cold War. It was noted that although large-scale international grain trade was established centuries ago[1] food aid is a relatively recent phenomenon, almost peculiar to the twentieth century, and has been promulgated out of commercial, geopolitical and ideological imperatives as well as humanitarian concerns. The vulnerability of milk products to spoilage makes them a special sub-set of food, markedly more perishable than most internationally traded commodities, which is dominated by cereals trade. The expansion of international dairy trade and aid was, and is, contingent upon the invention of new technologies, some of them (e.g. fine sprayers suitable for buffalo milk) created as recently as the 1950s[2] and still (e.g. UHT milk) being developed.

In this chapter we shall look at changes in dairy production, trade and other aspects of its development on the global, continental, and regional scales, frequently making reference to changes in India, primarily from 1961 to the early 1990s. Meanwhile, a brief discussion of India's quality-of-life indicators in the post-Rajiv Gandhi mid-1990s can help illuminate the previous decades that are the time-frame of this study.[3] India is a natural touchstone for this thesis, not just because that country's White Revolution programme Operation Flood (OF) will be the focus of the following chapters, but because this large, populous country has been a crucible of post-colonial development paradigms - a focus of trade and development theorists around the world. India was the largest "non-aligned" nation of the Third World, resisting the tug-of-war between the

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[1] Dan Morgan (1979) *Merchants of Grain*.

[2] M.V. Kamath (1989) *Management Kurien-Style*: pp 4, 94, 120.

[3] Clive Crook (February 22, 1997) "A Survey of India: time to let go" . Crook draws from IMF, World Bank and other authoritative sources, including Jeffrey Sachs, Jean Drèze and Amartya Sen, Charles Collyns of the IMF, Robert Zagha of the World Bank and Adit Jain of the Economist Intelligence Unit (EIS) based in India.

First and the Second Worlds and - a point to be developed in Chapter 4 - adept at turning foreign trade or aid initiatives to its own advancement.

Selections for our Country Comparison Group

The principals in our comparison group are Bangladesh[4], Egypt, Pakistan and Zimbabwe - like India, all listed by Agrostat/FAO as "low-income" countries. Bangladesh and Pakistan were selected also because they neighbour India and share some of its heritage. Egypt was selected because it has been the largest recipient of dairy aid besides India.[5] Zimbabwe was chosen because like India, it has been the object of cooperative dairy development programmes studied by Shanti George, one of the principal sources to this thesis. Occasionally we also refer to Turkey, long a recipient of food aid in Food-for-Work programmes. Located on the right periphery of our maps - but increasingly at the centre of dairy marketing efforts - are South Korea and China which are becoming more important players in the international dairy trade.

Many of the misconceptions, failures - and successes - experienced by India shed light on experiences of other developing countries. In any event, India's cultural affinity for bovines, milk and dairying, provides a natural theatre for dairy development. We shall begin by looking at the general, somewhat disappointing backdrop of post-WW-II Indian economic development.

India's profile in LDC development

Status as the world's largest democracy has been a source of pride to India, in the five decades since independence in 1947. Of more dubious merit is "the Hindu rate of growth", a phrase frequently used by observers both inside and outside India, in attempts to explain the country's slow rate of development. Democracy has sometimes been blamed for India's failure to maximise its productive potential. For example, India boasts more infrastructure per capita than countries with quite autocratic regimes, such as China and Indonesia, yet lags behind them in recent output.[6]

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[4] Agrostat/FAO also lists Bangladesh on its "least-developed" category.

[5] Martin Doornbos *et al* (1990) *Dairy Aid and Development: India's Operation Flood*: p 67. In 1980 for example, Egypt imported 7000 tonnes of SMP from the US, in a trend that has continued.

[6] Crook (February 22, 1997) "A Survey of India" in *The Economist*: p 22.

On the other hand, democratic checks and balances (along with the limited powers delegated to the states, in India's federal system) may have saved India from costly misadventures of autocratic systems, such as misconceived initiatives in steel and agricultural sectors, and the political upheavals of the Mao era in China, or the political purges that followed the demise of socialist Indonesian leader Sukarno in the mid-1960s. Many observers would insist that, while India's economic development was not as rapid as some "Asian tigers", the country has retained a cultural heritage of great richness and diversity. William Greider[7] and also Robert Gilpin[8] point out that economically successful "Asian tigers" functioned as clients of the West in the Cold War, unlike India which preferred its "non-aligned" stance.

Nevertheless, by the mid-1990s, it now clear that - compared to many other LDCs - India could do better. There had been sufficient time to pursue its individual path to prosperity, and emerged relatively poor. After independence, and the secession of Pakistan, India enjoyed relative tranquillity in its domestic and foreign affairs, aside from acute crises, e.g. the incursion by China in the early 1970s (which happened to stimulate the milk industry), and chronic unrest by Kashmiri nationalists. One legacy from the British Empire era that the country continued to benefit from was the Indian Civil Service (ICS), an institution noted for accurate record-keeping, (a distinct advantage in pursuits such as cattle breeding). India also developed world class universities - but primary and secondary education languished.

Tellingly, over 50% of India's adults remain illiterate in the 1990s - compared to just 20% in China, or 10% in Thailand, according to the World Bank. Jean Drèze and Amartya Sen[9] show that in the period 1986-87, 51% of females, and 26% of males, aged 12-14 and living in rural areas, had never enrolled in school. In rural Uttar Pradesh, fully 68% of females and 27% of males, aged 12-14, had never enrolled in school. According to Clive Crook:

> Between 1960 and 1990 India's GDP grew by an average of a little under 4% a year - the "Hindu rate of growth", as it came to be known. In round numbers, Pakistan's GDP

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[7] William Greider (1997) *One World, Ready or Not*: p 199.

[8] Robert Gilpin (1987) *The Political Economy of International Relations*.

[9] Jean Drèze and Amartya Sen, authors of "India: Economic Development and Social Opportunity". Cited by Crook in February 22, 1997 *Economist* "Survey of India": p 18.

> over the same period grew by 5% a year, Indonesia's by 6%, Thailand's by 7%, Taiwan's by 8% and South Korea's by 9%.[10]

Blaming a "Nehruvian socialism" that he says had to be abandoned after oil price rises prompted a balance-of-payments crisis in 1991-93, Crook continues:

> India's planners had laid great emphasis on rapid industrialisation, the ostensible reason for interfering with a more market-driven course of development. Yet in India between 1960 and 1990 industrial output grew on average by only 6% a year. In Pakistan it grew by 8% a year, in Indonesia by 9%, in Thailand by 9%, in South Korea by 10% and in Taiwan by 12%. In 1960 South Korea's income per head was roughly four times bigger than India's - $800 at 1990 prices, compared with $200. By 1990 South Korean income was 20 times bigger - $8000 against $400.[11]

In what amounts to a repudiation of the development paradigms of previous decades, market-oriented observers and economists in the mainstream of the current IMF and World Bank paradigm such as Crook, Jeffrey Sachs[12], and Kazimierz Z. Poznanski[13] blame laggard development of the Indian economy (like the demise of Eastbloc economies) on isolation from foreign competition,, *dirigist* central planning, and failure to incorporate market disciplines - particularly before the reforms (albeit half-hearted, according to Crook) begun under PM Rao in 1991-93. More germane to this thesis, Crook claims India's "agricultural output has risen markedly more slowly than in most other Asian economies, that the Green Revolution still has not been taken to its ultimate limits, and that there is a general need for agricultural reform, which it may be inferred, would in turn stimulate the White Revolution. Crook says that individual farmers - not fertiliser manufacturers - should be subsidised. Public Sector Electricity grids should be improved (PSEs suffer chronic blackouts; faltering voltage necessitates frequent, costly rewiring of pumps, leading to widespread reliance on petroleum powered generators). The irrigation departments of state governments, rife with corruption, call out for reform.

Fortunately, reforms prompted by the early-1990s economic crisis (due to oil price rises in the Gulf War) have already stimulated internal investment in the agricultural sector. The Jain Group, which makes farm equipment, reported a 400% increase in turnover in the three years after reform began, and a rise in the number of its workers to 3000

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[10] Crook (February 22, 1997) "A Survey of India" in *Economist*: p 3.

[11] Crook (February 22, 1997) *Economist*: p 3.

[12] Personal observation: In decades before free-market philosophies became predominant, IMF employees were more likely to be called "planners" than "economists".

[13] Kazimierz Z. Poznanski (1987) *Technology, Competition, & the Soviet Bloc in the World Market*.

people.[14] External investment has also surged. Janairus Banaji details how India's new openness to foreign direct investment (FDI) has attracted large commitments by MNCs such as ITC which is diversifying from tobacco into food.[15] FDI will probably benefit both Green and White Revolutions. (See Chapter 4)

OF mistake avoidance

One example of reforms recommended by Crook, that could also benefit the White Revolution (see Chapter 4) is that of farm subsidies on fertiliser. Fertiliser and other inputs are critical factors in production of fodder - fodder being one of the chief limiting factors on Indian milk yield. There are obvious parallels between fertiliser plants and plants producing concentrated fodder pellets for milk production.

Although GOI subsidies for fertilisers have been cut from a remarkably large 0.9% portion of GDP in 1991 to 0.6% of GDP since 1991[16], there is still too much waste. Why? Because the subsidies continue to flow to indigenous fertiliser manufacturers, rather than directly to rural farmers. They function as disincentives to cost-cutting by fertiliser makers, keeping inputs costs high for farmers. This "boondoggle" benefits the special interests of fertiliser manufacturers, rather than farmers and milk production. If Crook's market-oriented reforms were put into effect, tariffs on fertiliser imports would be reduced (repudiating "import-substitution" policies long entertained by the GOI - and the lobbying efforts of fertiliser manufacturers seeking subsidies) and farmers would receive tax credits, or perhaps vouchers, leaving them free to buy the most cost-effective inputs for their farms - whether these inputs were of domestic or foreign manufacture.[17] Thence, competition would likely drive down input costs to individual farmers, leading to greater productivity in Indian agriculture. Lower tariffs on machinery used in fertiliser plants could allow recapitalisation of more efficient

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[14] *Economist* (January 21, 1995) Survey of India: p 8. Anil Jain says the firm could have done it without liberalisation, but it would have taken 4 to 5 years longer.

[15] Janairus Banaji (October 1996/January 1997) "Globalisation and Restructuring in the Indian Food Industry" in *Journal of Peasant Studies*: pp 191-210.

[16] Crook (February 22, 1997) "A Survey of India" in *Economist*: p 22.

[17] The reforms suggested by Clive Crook in *The Economist* could be said to fall generally within the free-market-oriented "Chicago school" of economics, personified by Milton Friedman (see Jagdish Bhagwati 1988 *Protectionism*: p 98), who maintained that government planning frequently limited the freedom of individuals to create wealth. It may also be said that Britain's Adam Smith Institute, which informed "Thatcherist economics" is philosophically similar to the "Chicago School". Ideologically, GOI economic policy probably retains more ties to "Nehruvian socialism" than to such free market philosophy.

domestic fertiliser plants - *if* this were necessary. But the chief advantage of pursuing Crook's recommendation is that it would reduce macroeconomic waste and raise productivity.

Lessons learned from this analysis of waste in the fertiliser industry, and the benefits of liberalisation could be extended to the supply of inputs for the White Revolution. Crook and other free-marketeers would likely recommend that all aspects of dairy inputs (including breeding, feeding and training) be opened to foreign competition.[18] The legions who criticise Operation Flood (see Chapter 4) would heartily agree that OF was sometimes guilty of waste, or price distortions, similar to the case of fertiliser, that Crook is properly critical of in the Green Revolution. On the other hand, serious charges of kickbacks and other malfeasance have been convincingly denied by OF officials.[19]

At a later stage in the OF controversy, Edward Clay and Olav Stokke say studies of "the very expensive development programme" show "no dramatic nutritional impact, either negative, in the producing communities, or positive in the consuming urban areas." They agree with critics that income benefits from OF were distributed "inequitably, following a pattern of other major Indian development programmes." Clay and Stokke add that:

> The increase in milk production achieved by the so-called white revolution seems to have been brought about by a combination of factors. Retail price controls...Producers have been subsidised..None of the evaluations of Operation Flood taken from a donor perspective has been able to conclude unequivocally that the benefits have justified the considerable transfer of resources financed by European taxpayers through the Common Agricultural Policy and the European Community Aid Programme.[20]

Defenders of Operation Flood would accept Clay and Stokke's grudging admission that Indian milk yield increased and retort that, of course OF was costly - after all, many crucial aspects of OF can be traced to dynamics (e.g. surplus disposal, market

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[18] Although India's artificial insemination (AI) programmes, especially in the cross-breeding of indigenous Zebu cattle to European breeds like Friesians, are making some progress, free-marketeers would argue that competition from foreign AI organisations (e.g. Curtis) would stimulate cost savings in India. Cost savings might also be stimulated by further opening Indian markets to concentrates inputs (e.g. malt, whey, etc.) imports from other countries. The scope for foreign roles in dairy extension services and training is harder to state, because knowledge of indigenous conditions is crucial in appropriate dairy training.

[19] M.V. Kamath (1989) *Management Kurien-Style*. In his lengthy profile of Operation Flood, Kamath indicates that OF sins, if any, generally were of omission not commission.

[20] Edward Clay & Olav Stokke (1991) "Food Aid: The State of the Art" in their edited book *Food Aid Reconsidered: Assessing the Impact on Third World Countries*: p 15.

penetration and export promotion) made inevitable from milk mountains that grew as the result of rich country subsidies within the EEC. This can hardly be stated too strongly.

That OF did not meet all the optimal expectations is unsurprising. What must be borne in mind is how much happier the present state of Indian dairy development is compared to what it could be: continued milk rationing in the cities, no milk production increases in any region of India, and heightened dependence upon EEC or US dairy commodities. This scenario of dependency, amounting to neo-colonialism, could easily have become reality - had Indian dairy leaders not acted in the interests of their own dairy autonomy. Facing an EEC able to (given political compliance between Europe and India) devastate Indian dairy price structures with a mountain of "free" dairy aid, it is to their credit that India "looked this gift horse in the mouth", refused to be cowed, and negotiated terms with Europe that today reflect (at the least) some credit on both donor and recipient.

This thesis contends that Indian dairy development benefited from important incidents of waste avoidance. These wise choices (running contrary to official "import-substitution" policies and allowing OF authorities more flexibility in procurement, etc.) eventually contributed to rises in Indian GDP, reductions in its balance-of-payments accounts - and long-term protection of its dairy autonomy. A prime example of this was the insistence by Operation Flood officials on the importation of the highest-level, most appropriate technology, for its dairy processing infrastructure. This was exhibited in the choice of milk powder spraying equipment bought from Denmark (see Chapter 4) which, like the case of fertiliser reform suggested above, runs counter to long-held policies of import substitution. Shattering pessimistic expectations, the exposure of Indian dairy equipment manufacturers to foreign competition actually seemed to spur their development even *before* early-1990s economic reforms. By the 1980s, most (if not all) dairy infrastructure could already be manufactured domestically.

Testifying to the retarding effect of too much protection from imports, Rahul Bajaj, leader of a large family concern specialising in small motorbikes (reminiscent of the Agnelli family's activities in Fiat in Italy) now says publicly that previous central planning by GOI stifled innovation, leaving the Bajaj company free to make profits on

shoddy scooters. Jagdish Bhagwati compares the "proscriptive government" of India which - except in the case of OF stifled innovation and entrepreneurship - to the government of Japan, whose MITI fostered innovation and export-led growth.[21]

Bear in mind that 65% of India's labour force remains on the land, compared to just 5% of Japan's.[22] True, relatively few Indians have been engaged in the production of consumer durables such as scooters, until recently. But today India ranks as one of the world's largest "emerging economies" with a burgeoning middle class. Rural-to-urban migration can be expected to accelerate, and although India still enjoys what can be called a surplus pool of rural labour, pressure will increase to increase farm productivity to maintain present levels of farm production. Hence, the case for further opening the economy increases. Free-marketeers such as Crook and Sachs argue that opening economies to the importation of farm implements, e.g. generators, roto-tillers, small tractors, welding equipment, etc. can stimulate what a previous paradigm labelled "integrated rural development". Although such imports can worsen national balance-of-payments accounts, recent experience of improvements in Indian car and motorbike production indicates that opening markets has a net benefit to the national economy, especially when foreign firms (e.g. Suzuki) set up joint ventures inside India. Certainly production of farm equipment, inside India, could raise agricultural productivity and benefit the entire economy.

A free-market critique of India's capacity-licensing regime

According to Crook, India's capacity-licensing regime, which was constructed to ensure that growing firms did not control an "unduly large share" of India's scarce resources, was disastrous, because it (explicitly) ignored the price signals necessary to raise market efficiency, and national productivity.[23] Crook's dour analysis of India's performance over the last 50 years, and his prescriptions for reform (reflecting IMF and World Bank-mandated SAPs in other developing countries, including, e.g.: abandonment of domestic price controls, tariff reductions, subsidy cuts to special interests such as fertiliser makers, etc.) is persuasive on many counts. However, some

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[21] Jagdish Bhagwati (1988) *Protectionism*: p 100. Although OF was more of a QUANGO than a private firm, the autonomy granted its leadership allowed it to make wealth-maximising decisions denied more bureaucratic industries, including perhaps the steel industry.

[22] Agrostat/FAO/1994.

points ought to be made here in defence of India's past efforts in agricultural development in general, and in dairy development in particular:

(1) While it is true that India's agricultural output has not risen as fast as most Asian countries, it should be noted that several countries around the world (some with better factor endowments than India) have had comparatively worse records in both the Green and White Revolutions.

(2) India is a vast country with a huge, heterogeneous population, so the fact that there has been *any* rise in Indian output is sufficient to improve world aggregate figures.

(3) Although Indian agricultural growth has lagged behind China in the post-Mao era (and that this may point to the need for further liberalisation and reform of India's farm sector), it stands to the credit of the government of India, and to the cooperation of the WFP, FAO and other multilateral, national and NGO actors in the world food trade and aid regimes, that post-independence India has not suffered to the extent of China, where an estimated 20-30m people died during famines in the Mao era.

Indeed, it is deplorable that, by many development markers (measured by OECD statistics, etc.) such as infant mortality, female and overall literacy, India's performance is poor. However, in the case of dairy development, this thesis presents evidence that India has done rather better than many competing countries, owing in part to shrewd decisions on infrastructure investment, auspicious utilisation of what could have been problematic dairy aid, and practical attention to farmgate prices paid to rural farmers, as well as affordable prices for urban consumers. The White Revolution employed some realistic pricing and marketing policies more in line with Clive Crook's ideal state, than other sectors characterised by what he called: "India's insanely repressive system of domestic planning and regulation."[24]

View of this thesis

Against this portrait of a sub-continental-sized Third World country, complacent in its status as a democracy of great cultural richness - and against Crook's portrayal of a

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[23] Crook (February 22, 1997) *Economist Survey:* p 4.

[24] *Economist Survey*: op. cit.

thrifty, hard-working population bound in economic misery because of governmental *dirigisme* - this thesis argues that in the case of dairy development, India has done rather better than many competing countries. According to Alderman, Mergos & Slade

> Total milk production in India increased at a rate of 5.5% a year between 1970 and 1985, yet only 6.0% of total milk production was handled through cooperatives at the end of this period. Thus it is clear that progress must be occurring throughout the sector.[25]

At the least, this thesis holds that Indian dairy development would have been less advanced without Operation Flood. A plethora of ambitious attacks on India's attempts at making its dairying "vertically integrated from producer to consumer"[26] (in Doornbos, Gertsch & Terhal's 1991 phrase) have identified shortcomings in the scheme - but cannot disprove evidence of improvements in India's overall dairy production or per capita consumption.

In the next, concluding chapter, this thesis will further examine the varying degrees of success (e.g. increasing milk supply and guarding national "dairy autonomy"), or failure (e.g. to spur rural development and bring all minorities into the cash economy), by Operation Flood.

Now, however, we shall examine empirical evidence generally supporting this view, from charts and maps representing international dairy production, trade, and consumption, from the 1960s to the 1990s, drawing freely from the Agrostat computer database disseminated by the UN's Food and Agricultural Organisation (FAO) in 1990 and 1994.

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[25] Harold Alderman, George Mergos & Roger Slade (1987) *Cooperatives and the Commercialisation of Milk Production in India: A Literature Review*. IFPRI: p 6.

[26] Martin Doornbos *et al* (1991) "Dairy Aid and Development: Current Trends and Long-Term Implications of the Indian Case" in Clay & Stokke (1991) *Food Aid Reconsidered*.

Examination of Charts & Maps

World charts

The chart labelled ***World Milk & Population 1961-1990*** **(Figure 2, logarithmic Y-axis)** shows that world population was rising faster than milk production well into the 1970s, when India's Operation Flood got underway. Immediately apparent is the dramatic rise in milk production of Asia, beginning at a low level but climbing to intersect the curve on North & Central America, and approaching that of the USSR.[27]

On the similarly labelled chart **(Figure 3, standard Y-axis; see appendix)**, a drop in world milk production is apparent around 1963, roughly coinciding with the first major sale of US grain to the USSR, during the Kennedy administration. It is possible that this block-sale to the USSR (whose purpose was to increase beef and dairy production in that country) subtracted from fodder stocks available to dairy producers in other countries. Another plateau in world production is discernible in the years ca. 1966-71. Although this period is also that of the famine in Rajasthan and other parts of India, about 1968, and also a period of milk rationing in Indian cities, the graph of Asian milk production shows little drop - probably because overall Asian production was still at a low base. The drop in aggregate world milk production around 1968 appears to be attributable more to a drop in North and Central American milk production, than to drops in India.

These charts show, that as Indian production becomes an ever greater portion of the world share, it has a progressively greater effect on world dairy performance. To whit: India's worst drought in a century, about 1987, correlates with a dramatic dip in world milk production at that time. But it is important to note that the dip in world production at that time probably was a result also of production controls in rich countries, i.e. the cumulative effect of the herd-buyout programme in the US in 1986, and milk quotas imposed in the EC in 1984.[28]

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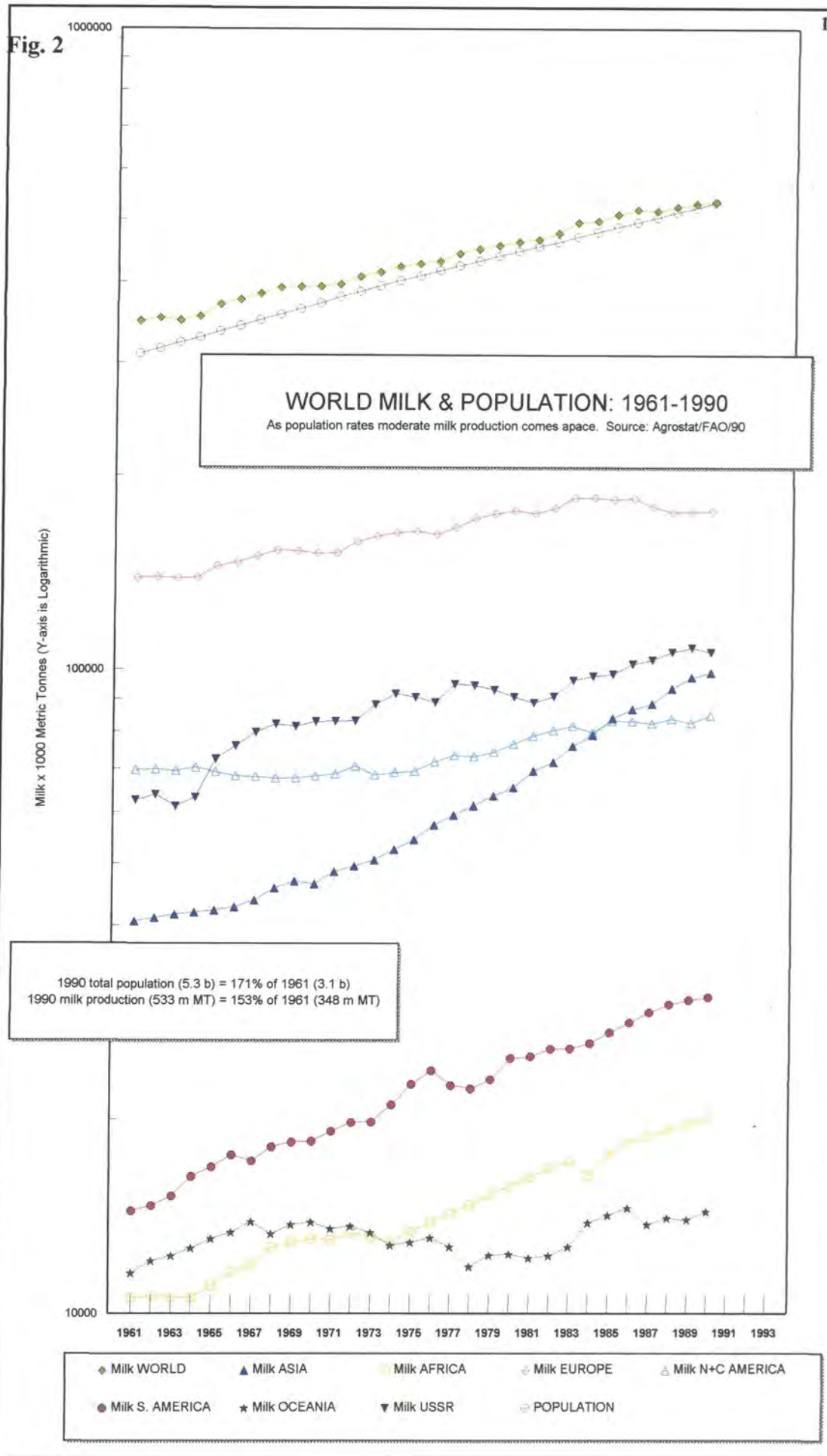
[27] John Empson (September, 1992) "India Joins the Big League" *Dairy Industries International*: pp 21-23 Empson writes that India is responsible for much of the rise in Asian milk production.

[28] B.A. Scholten (July, 1990) "Europe's milk quotas...six years down the road", in *Hoard's Dairyman*: p 587. Original quota levels were further reduced, lowering EC/EEC butter and milk powder mountains. The refusal of the more free market oriented US to countenance production controls like quotas, or renewed herd buy-outs, or slaughter-and-compensation schemes, led to the shattering of meaningful price-supports for US dairying. This was in line with GATT aims, but accelerated the demise (ca. 7-15%) of marginal (often "family dairy") farms in the US, in the last decade.

Fig. 2


WORLD MILK & POPULATION: 1961-1990
As population rates moderate milk production comes apace. Source: Agrostat/FAO/90
Milk x 1000 Metric Tonnes (Y-axis is Logarithmic)
1000000
100000
10000
1990 total population (5.3 b) = 171% of 1961 (3.1 b)
1990 milk production (533 m MT) = 153% of 1961 (348 m MT)
1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993
Milk WORLD
Milk ASIA
Milk AFRICA
Milk EUROPE
Milk N+C AMERICA
Milk S. AMERICA
Milk OCEANIA
Milk USSR
POPULATION

In the top of two horizontally-grouped charts labelled ***Imports Selected Third World Milk (excluding butter)[29] 1961-1989*** **(Fig. 4)** several Third World countries including Pakistan, Bangladesh, Egypt and (especially) Nigeria increased milk excluding butter imports (i.e. mostly skimmed milk powder - SMP) during the 1970s. This was probably due to a variety of factors including oil price rises after the 1973-74 OPEC boycott, enabling petroleum producers like to import more SMP, as well as to finance "petro-dollar" loans to other developing countries, whose deteriorating foreign reserves also increased their need for dairy aid.

The surge in Indian imports through Operation Flood is also shown. By the late 1980s, OF officials were concertedly attempting to stop importation of foreign dairy commodities, but a resumption of imports was necessary because of the 1987-1988 drought.[30] As Egyptian imports also show a steep rise at the same time (ca. 1988) as India's, it is likely that a burgeoning surplus in the US (the 1986 herd buy-out[31], etc. effectively managed the US surplus for only 2-3 years), and untamed production pressures in the EEC led to concessionary sales of milk powder, etc.[32]

On the bottom chart with its lower scale, the import curves of China (nearly 300 thousand tonnes in 1988, from zero in 1977 lend credence to this analysis. Interestingly, these events around 1987, coincide with a softening of imports by Bangladesh, and a stabilisation of milk (ex. butter) imports by Nigeria following a sky-rocketing of Nigerian milk imports 1976-84.

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[29] Following Agrostat/FAO groupings, this thesis uses data from milk production *in toto*, and its two main sub-groups, i.e. (1) "milk excluding butter" and (2) "butter & ghee" to reflect various dairy performance indicators such as production quantities, exponential growth of production, and per capita intake or consumption. Although (1) and (2) do not add up to the sum of all milk production (due to diversions, e.g. whey and casein supplied to the chemical industry) these sub-groups are the principal sources of dairy intake by humans.

[30] NDDB (ca. 1988-89) *Operation Flood: a Progress Report*: p 12.

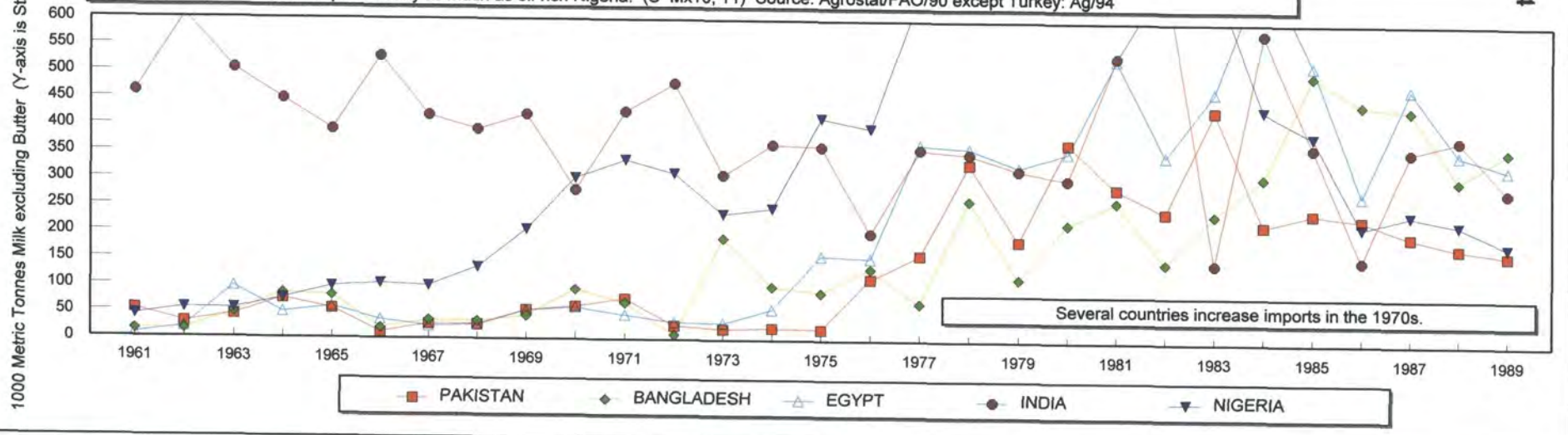
[31] Many of the dairy cattle purchased by the US government from its farmers in the 1986 herd buy-out were to be sent to China. Both the US and the EC/EEC were determined to cut their dairy surpluses.

[32] Willi Kampmann (September, 1988) "20 Jahre EG-Milchmarktordnung" in *Deutsche Bauern-Korrespondenz*: pp 327-330. Dr. Kampmann of the Deutscher Bauernverband (DBV, Bonn, interviews 1989-1991) told me that milk quotas were imposed partly to stabilise the world price of SMP which had plummeted during years of surplus.

Fig. 4

IMPORTS SELECTED THIRD WORLD MILK (excluding Butter): 1961-1989

India imports nearly as much as oil-rich Nigeria. (S~Mx10, 11) Source: Agrostat/FAO/90 except Turkey: Ag/94



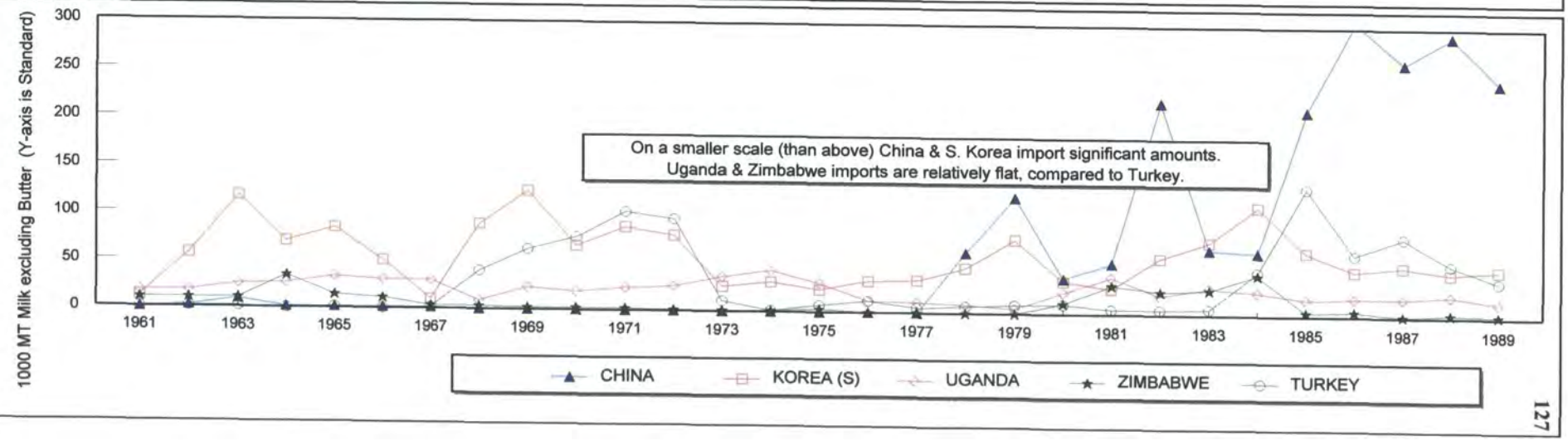
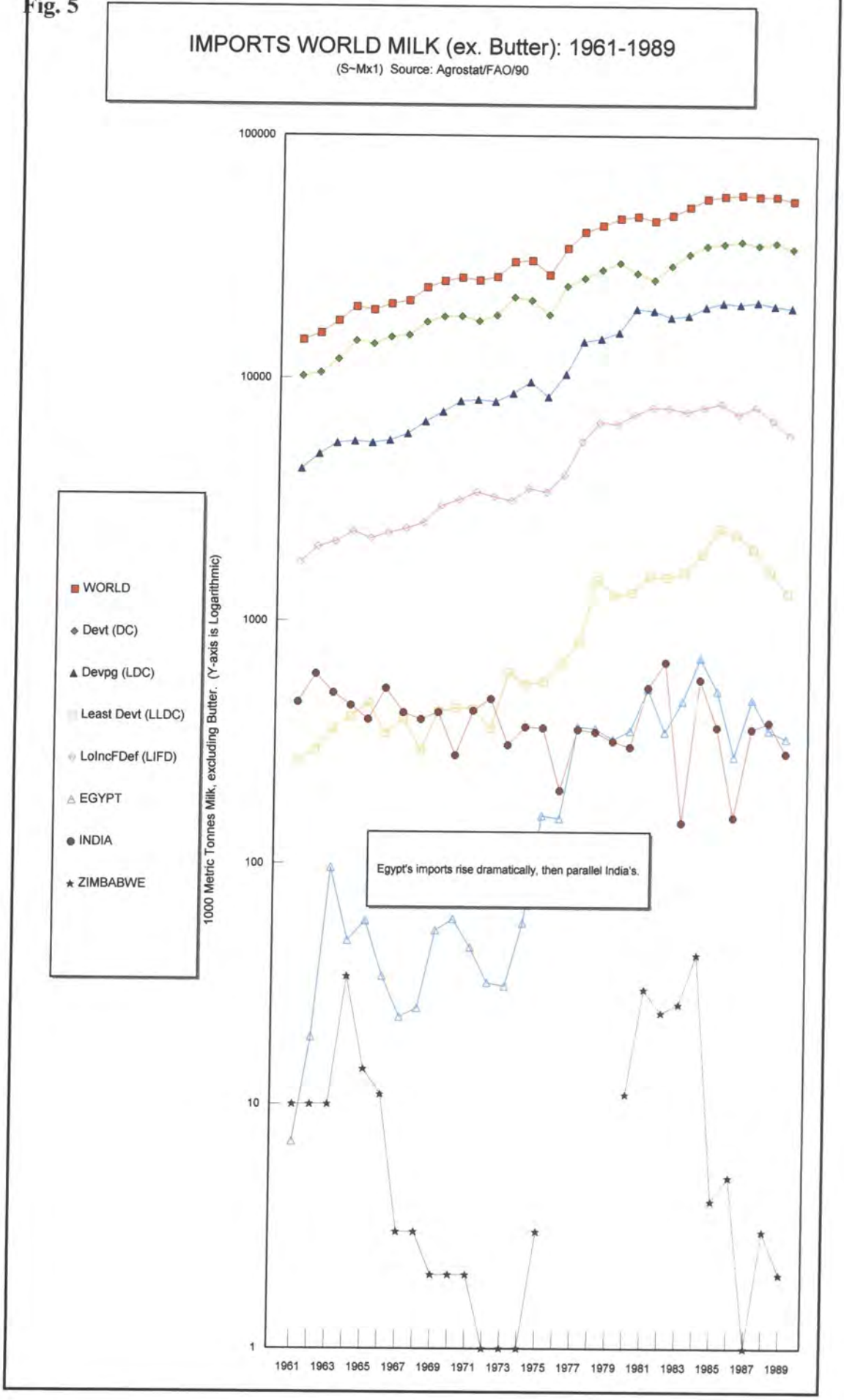


Fig. 5


IMPORTS WORLD MILK (ex. Butter): 1961-1989
(S~Mx1) Source: Agrostat/FAO/90
100000
10000
1000
100
10
1
1000 Metric Tonnes Milk, excluding Butter. (Y-axis is Logarithmic)
WORLD
Devt (DC)
Devpg (LDC)
Least Devt (LLDC)
LoIncFDef (LIFD)
EGYPT
INDIA
ZIMBABWE
Egypt's imports rise dramatically, then parallel India's.
1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989

As John Empson points out, India probably will be the world's number two dairy producer (behind the ex-USSR countries) within a few years. Thereafter, world production curves will echo the hiccups of Indian dairying even louder than at present.

Continents Milk Production Charts

The horizontal **(Fig. 6 below)** and vertical **(Fig. 7 with statistics in appendix)** bar charts labelled ***Continents Milk Production: 1961-70-80-90*** show that production has stabilised in the mature milk markets of Europe, North & Central America and ex-USSR/Russia compared to Asia (including India) as a whole, and Africa. Africa probably has much more scope for milk consumption and production than is seen at present, much due to the "lost decade" of the 1980s, when drought, lack of investment and debt depressed African development. South America, whose economic performance is rising after desultory output in the 1970s may, partly because of a cultural predisposition toward milk, continue to grow in a pattern not dissimilar to that of the US.

Owing mostly to the surge in Indian national production, Asia as a continent has almost pulled apace ex-USSR/Russia production. If the population of China, even greater than that of India, develops a taste for dairy ice cream or (less likely, given Chinese cultural predispositions, and the lactose-intolerance of many adults) liquid milk, Asian figures could dwarf those of other continents.

Although it can be assumed that, especially since WW-II, the US has had much influence upon the diets and consumption habits of people on the island groups of Oceania[33] such as Samoa and Vanuatu, Agrostat's inclusion of strong dairy producers and exporters Australia and New Zealand in the continental group Oceania makes it difficult to discern the discrete effects of US marketing from the bar charts.

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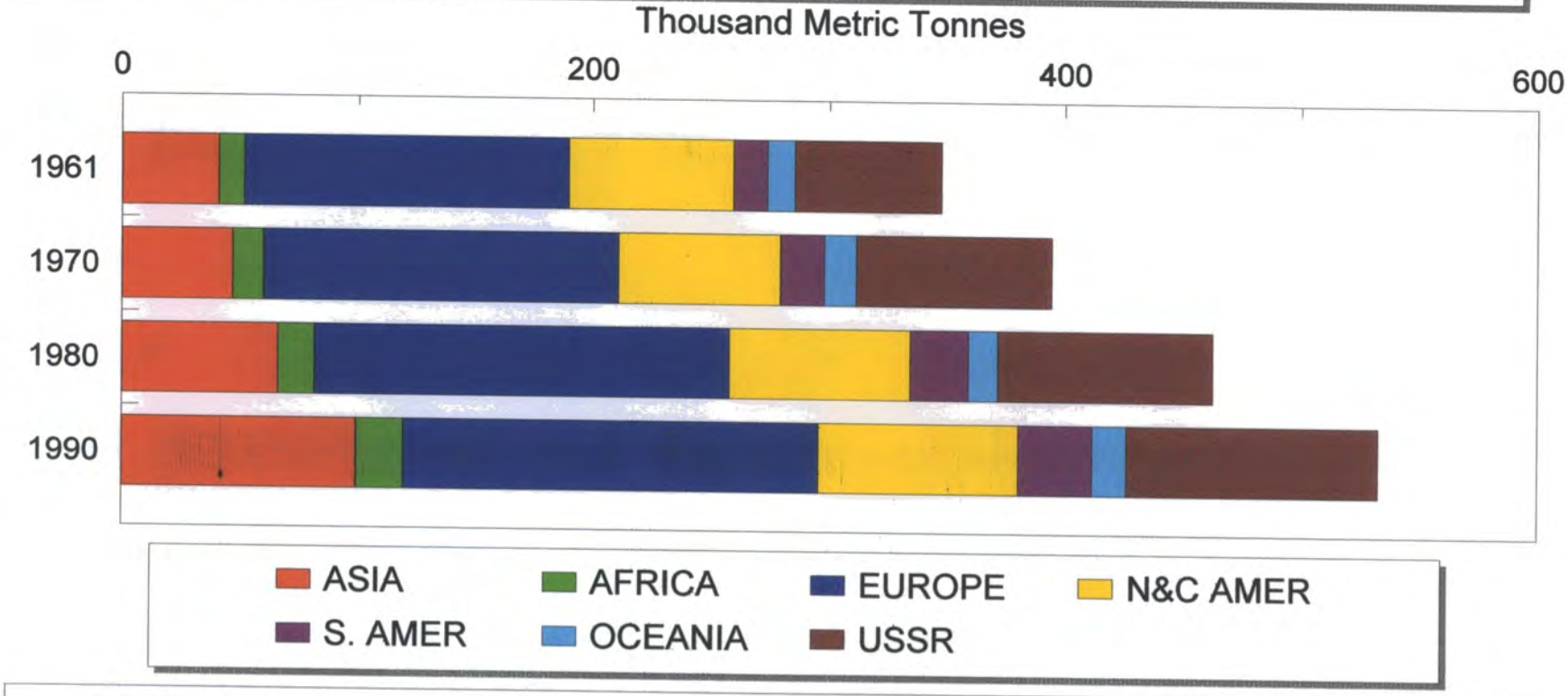
[33] Personal observation: a few islands became distinguished by so-called "cargo cults" after WW-II. The spread of US military supplies, such as milk powder, across the Pacific Rim changed diets. Now so-called American "hamburger culture" and the growing popularity of mozzarella-based cheese pizzas are increasing dairy product consumption in the urban centres of Oceania - and around the world.

Fig. 6

CONTINENTS MILK PRODUCTION: 1961-70-80-90



Asia (incl. China & India) on left, USSR on right. Europe maintains a 2:1 production ratio on N & C America.
Source: Agrostat/FAO/90 (Chart S~CM61b.wk4)

Be that as it may, the big question for North American dairists is whether high-technology and world market prices will cooperate to keep them as big exporters to Asia.

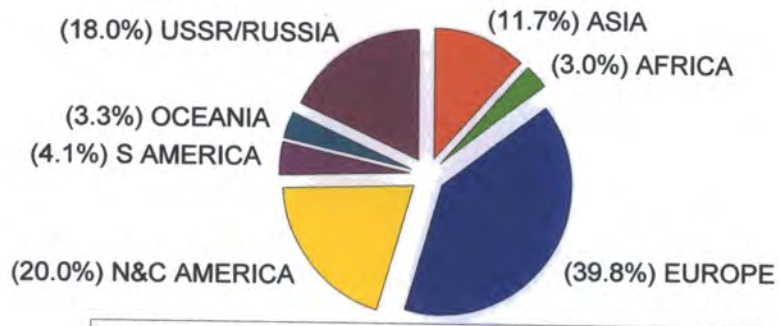
The question for Europe is whether, after milk quotas expire around the year 2000, the EU Commission will elect to renew milk quotas, or abandon them and fight the US in North America, and Australia and New Zealand in Oceania - and perhaps even the Indian sub-continent - for world market share. Such a question also poses itself to Canada whose milk quota is being questioned under GATT/WTO rules, as well as the NAFTA trade agreement with the US and Mexico..

The group-of-four pie charts **(Fig. 8)** labelled ***Continents Milk 1961, 1970, 1980 and 1990*** show that after stasis of 11.7% to 11.8% shares of world production in the years 1960s and 1970, Asian world production share rose significantly to 14.2% in 1980, and 18.6% in 1990. **(N.B.: Accompanying the pie slices are figures of gross world milk production, rising from 348m MT in 1961 to 533m MT in 1990.)** Recall that the charts **(Fig. 2)** and **(Fig. 3)** labelled ***World Milk & Population 1961-1990*** traced the steepening rise of Asian milk production.

Fig. 8

CONTINENTS MILK 1961

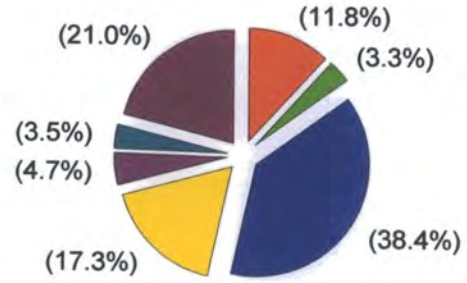
World: 347,714,000 Metric Tonnes (MT)

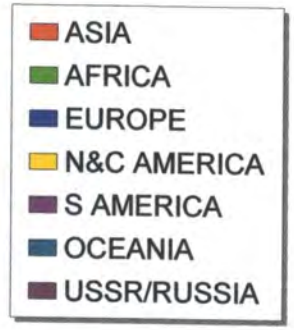


Asia (incl. China) & USSR stats are best FAO estimates.

1970

World Milk Production: 394,466,000 MT

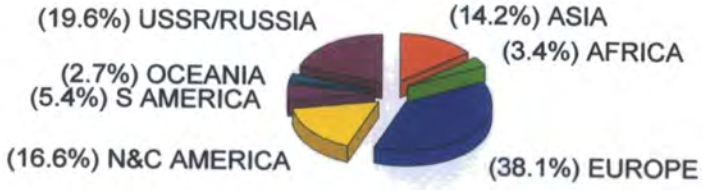




North & Central America lose share.

1980

World: 462,526,000 MT



Asia world share gains on Africa and S America as USSR stabilises and Oceania sinks.

1990

World: 532,622 x 1000 MT Source: Agrostat/FAO/90

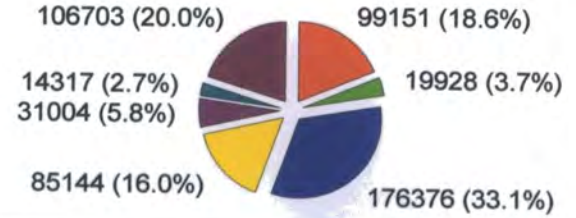


Fig. 9

DC/LDC PRODUCTION 1961

World: 347,714,000 Metric Tonnes (MT)

Developed Countries: 282,955,000 MT total fresh milk
Less Developed Countries: 64,759,000 MT

MILK 1970

World Milk Production: 394,466,000 MT

Developed Countries: 317,828,000 MT
Less Developed Countries: 76,639,000 MT

1980

World: 462.526,000 MT

From <1/5 world milk in 1961, LDCs produced about 1/4 in 1980. Soon LDCs may produce 1/3 world milk.

1990

World: 532,622 x 1000 MT Source: Agrostat/FAO/90

Developed Countries: 384,401,000 MT total fresh milk
Less Developed Countries: 148,221,000 MT

Rich/Poor (DC/LDC) Milk Production Charts

The group of four pie charts **(Fig. 9)** above labelled *DC/LDC Milk 1961, 1970, 1980, 1990* tell us nothing about per capita intake, but they do reflect significant growth of dairying among poorer countries. Production figures placed next to the pie slices show that LDC production rose little from 1961 (65m MT) to 1970 (77m MT), but climbed much faster thereafter. Coinciding with the main thrust of Operation Flood, LDC milk production reached impressive levels in 1990 (148 million MT).

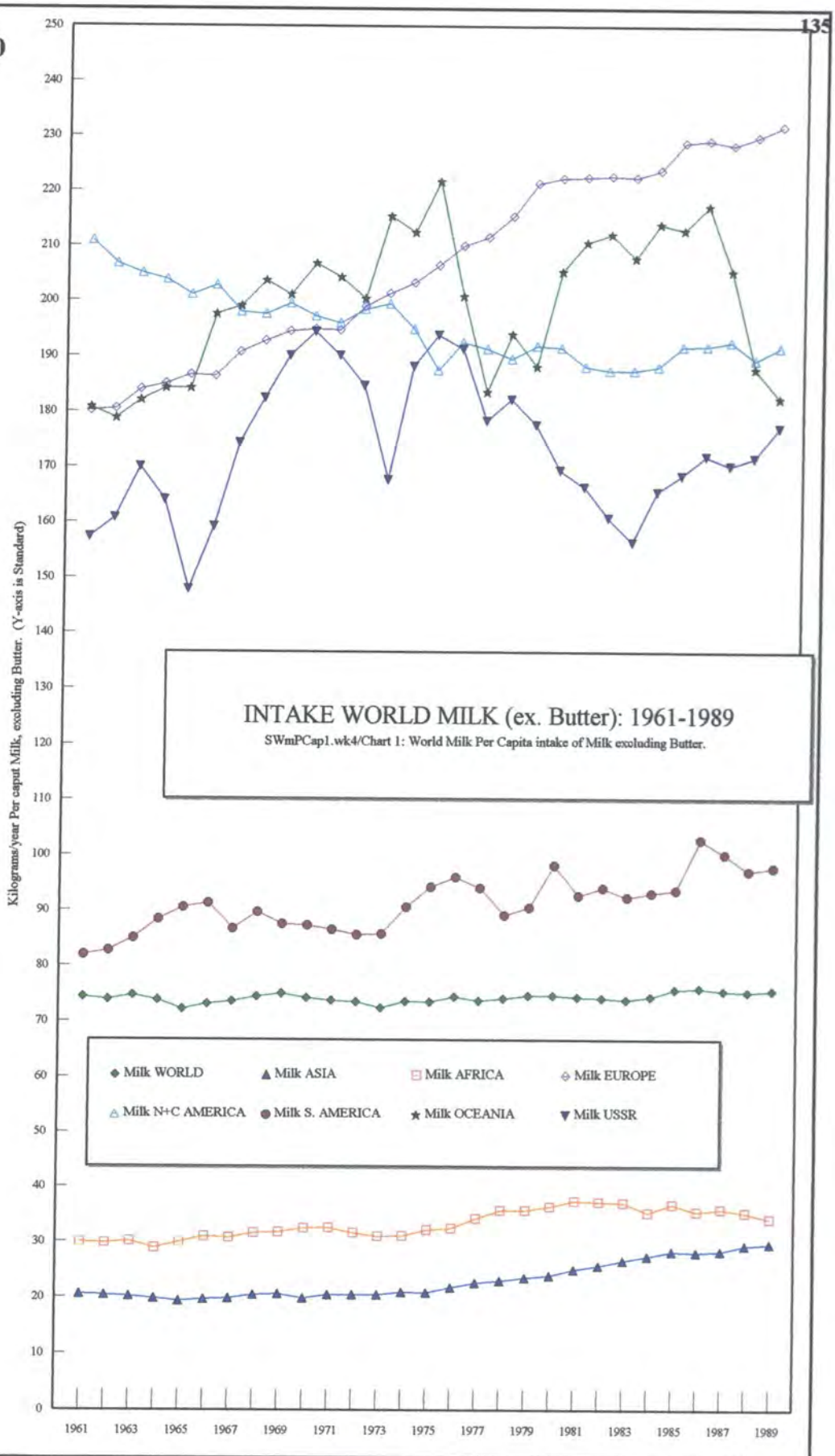
Between 1961 and 1990, LDC production more than doubled and LDC world milk production share rose from 18.6% to 27.8%. Because India is now producing high levels of milk, it is probable that Asia will soon account for one-third of world production - a remarkable rise from less than one-fifth in 1961.

Continents, Countries & Economic Groups: Milk (ex. Butter) Intake Charts

Of course production figures say little about food security. If food production doubles in a period when population triples, there will be a net loss in per capita food availability. Much more indicative of a state of nutritional well-being are data on per capita intake (*aka* consumption), although it must not be forgotten that aggregate food supplies do not alone guarantee adequate "entitlements", in Amartya Sen's word, to food by all quintiles of a population. That said, per capita intake can be a valuable indicator of food security. The chart **(Fig. 10)** labelled *World Milk (ex. Butter) Intake 1961-1989* shows average Asian intake of milk excluding butter (in the Agrostat/FAO terminology) starting at a very low level compared to all other "continents" groups (in the Agrostat/FAO grouping), but climbing steadily. The Asia intake curve appeared ready to intersect that of Africa about 1990.

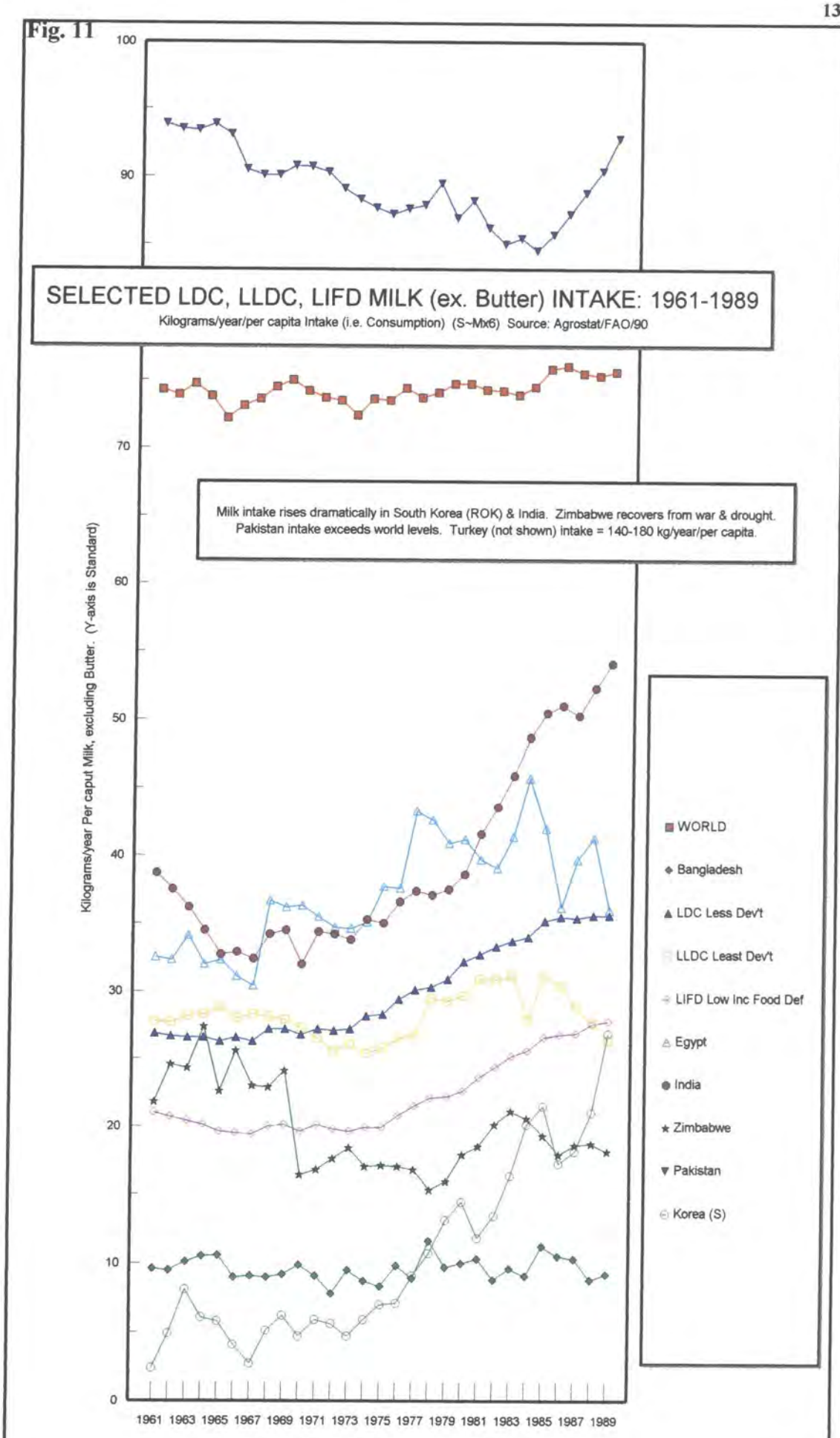
More can be learned about intake per capita from the chart **(Fig. 11)** labelled ***Selected LDC, LLDC, LIFD Milk (ex. Butter) Intake: 1961-1989***, because it disaggregates rich Asian countries such as Japan from poor ones such as Bangladesh. Although the idea can not be proven from this chart, an expectation of a positive relationship between income level and milk (ex. butter) intake is found to be true. This suggests that as income levels rise, the supposed cultural indifference of some Asian countries to milk could be overcome by a concerted marketing campaign.

Fig. 10



World 1961 per capita Intake Milk ex. Butter: (74.3 Kg/1961) and (75.6 Kg/1989). Min: (72.2 Kg/1965), Max: (76.0/Kg/1986)
Per Capita Mean: (74.2 Kg/year), Stand Dev: (0.9), Coef Var: 1.23%, Exp Growth: 0.08%

Fig. 11


SELECTED LDC, LLDC, LIFD MILK (ex. Butter) INTAKE: 1961-1989
Kilograms/year/per capita Intake (i.e. Consumption) (S~Mx6) Source: Agrostat/FAO/90
Milk intake rises dramatically in South Korea (ROK) & India. Zimbabwe recovers from war & drought.
Pakistan intake exceeds world levels. Turkey (not shown) intake = 140-180 kg/year/per capita.
Kilograms/year Per caput Milk, excluding Butter. (Y-axis is Standard)
100
90
70
60
50
40
30
20
10
0
1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989
WORLD
Bangladesh
LDC Less Dev't
LLDC Least Dev't
LIFD Low Inc Food Def
Egypt
India
Zimbabwe
Pakistan
Korea (S)

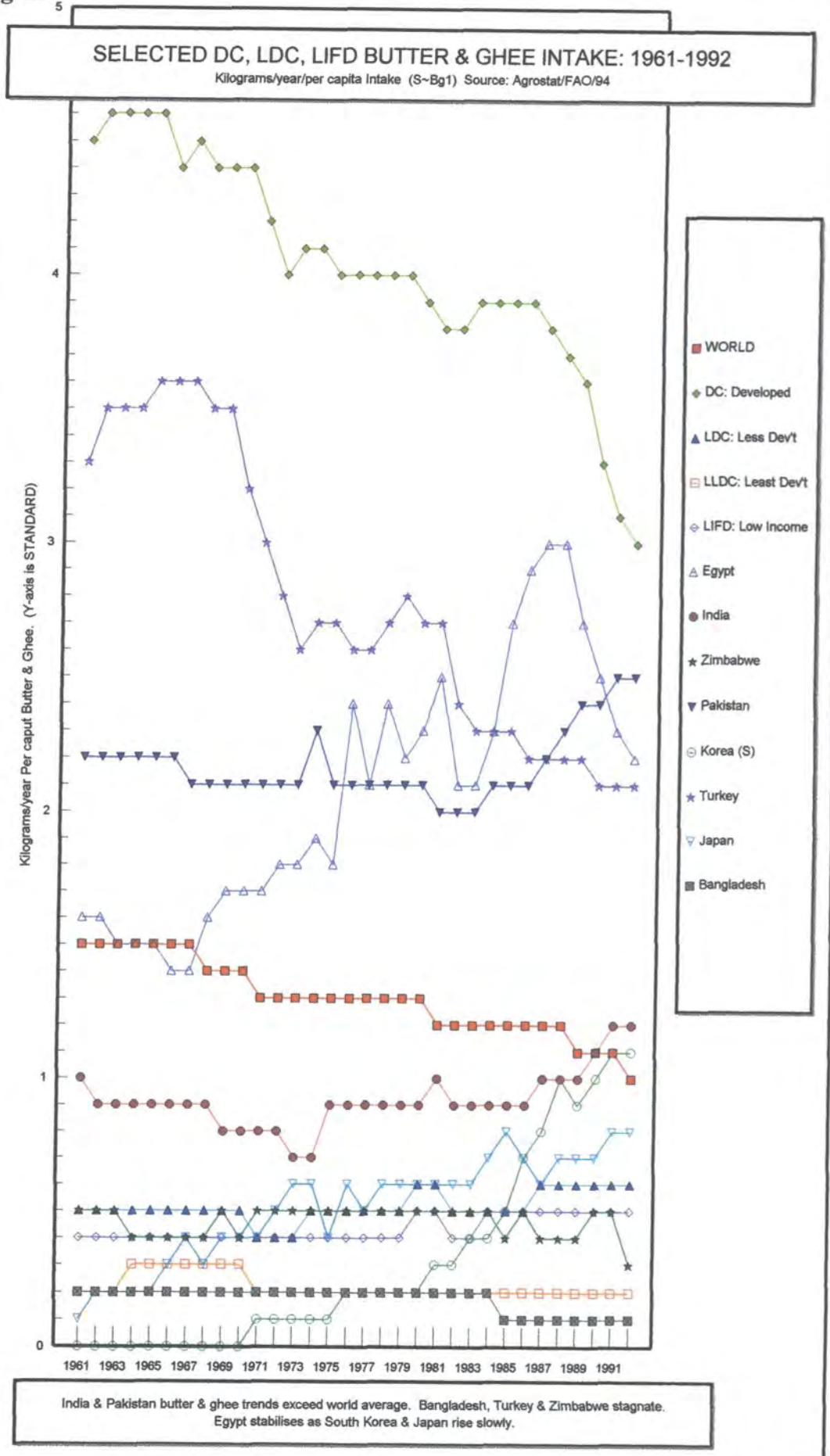
As well as showing intake trends of special economic sub-groups among poor countries, **Fig. 11** also shows intake trends of Bangladesh, Egypt, Zimbabwe, Pakistan and South Korea - in relation to India and the World as a whole. After a flat period in the 1960s, milk (ex. butter) intake is rising noticeably. This has important implications for future commodity flows, particularly cereals, which can be used as concentrated inputs in dairy fodder. As the caption **(Fig. 11)** notes, milk (ex. butter) intake rose dramatically in Pakistan and South Korea (ROK). The negative effects of trade embargo and civil war (1969-81), and regional drought (ca. 1982-late 1980s) are evident in Zimbabwe. Zimbabwe's milk (ex. butter) intake curves are roughly paralleled by that of Low-Income-Food-Deficit LIFD) countries. About 1962, Zimbabwe had close to the average of about 27kg. of annual per capita intake averaged by LIFD countries, but thereafter fell below, probably owing to the aforementioned political and climatic difficulties.

Intake in Turkey and the UK is shown in **(Fig. 12 in appendix)** labelled *Selected DC, LDC, LLDC, LIFD Milk (ex. Butter) Intake: 1961-1989.* Turkish intake begins at ca. Double average world intake, at a level higher than that of rich countries (DCs) as a whole - but generally plunges thereafter except for a brief plateau 1979-81. Nevertheless, Turkish intake remains higher than Pakistan's, and also higher than that of India which, nevertheless, is rapidly approaching world levels.

Continents, Countries & Economic Groups: Butter & Ghee Intake Charts

Butter & ghee (in Agrostat/FAO terminology) are primary forms taken by dairy products in India and other countries with little access to electrically-powered refrigeration. The chart **(Fig. 13)** labelled *Selected DC, LDC, LIFD Butter & Ghee Intake: 1961-1992* shows a dramatic drop (often 40%) in butter & ghee intake in rich, developed countries. (N.B. These data correlate with evidence in maps labelled *Butter & Ghee kilograms per capita Intake 1961.*) Increased consumption of cheese in burgers and pizzas, as well as a 1980s' increase in speciality "yuppie cheeses" have replaced butter in the diet of many Americans, in a pattern likely replicated in other rich countries.) Intake rises of butter & ghee in poorer countries generally rose, although not as fast as milk (ex. butter).

Fig. 13



India & Pakistan butter & ghee trends exceed world average. Bangladesh, Turkey & Zimbabwe stagnate. Egypt stabilises as South Korea & Japan rise slowly.

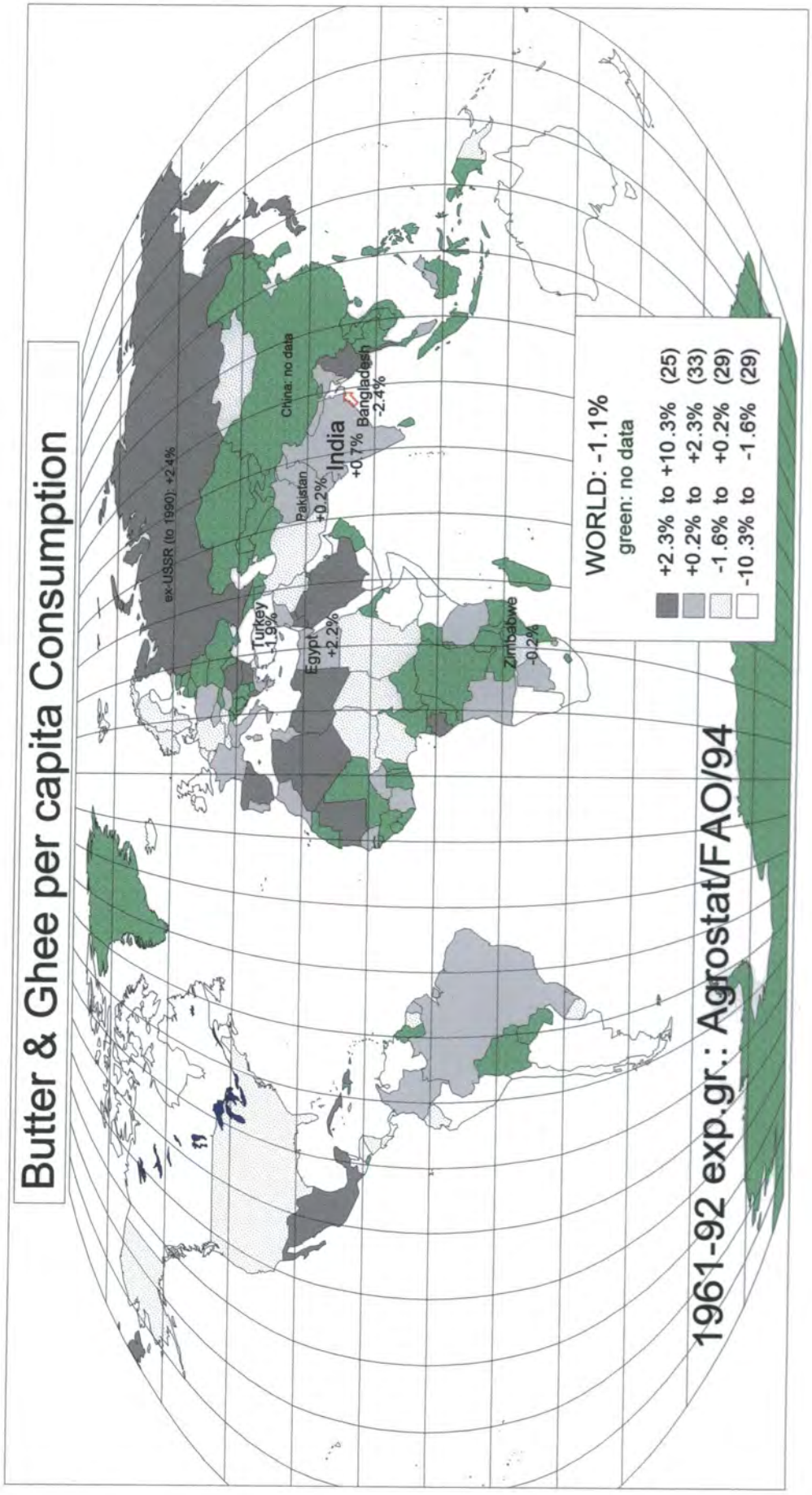
Of great interest to this thesis is India's 20% rise in intake of butter & ghee (one of the most important traditional dairy commodities in India) from 1.0 kg. per capita to 1.2 kg. per capita in 1991 and 1992 shown in **Fig. 13.** This rise is all the more impressive after intake plummeted to a depth of just 0.7 kg. per capita in 1973 and 1974. This shows that India surpassed average world intake of butter & ghee in 1990 and if trends continue, will reach levels of Egyptian intake in time. Except for the years 1973 and 1981, India's butter & ghee intake seems to parallel that of the loftier level of Pakistan. The steady rise in India's butter & ghee intake since the depths of 1973-74 stands in sharp contrast to the slowly rising intake of low-income-food-deficit (LIFD) countries, and the declining butter & ghee intake of least-developed countries (LLDC) and Bangladesh. The fastest rising intake shown on **Fig. 13** is that of South Korea, which rose from zero in 1970 to near-Indian levels in 1991, and surpassed world intake levels in 1991.

MAPS

Butter & Ghee per capita Consumption exp. gr. 1961-92 map

These maps highlight India's success in dairy development since the decade of the 1960s, characterised by milk rationing. Exponential growth of per capita consumption of milk excluding butter is shown in by the maps **(Fig. 14 India focus)** and **(Fig. 15 all countries in appendix)** labelled *Butter & Ghee per capita Consumption exponential growth 1961-92.* We see that despite the 1973-74 slump in consumption noted in chart **(Fig. 13)**, India has managed 0.7% growth. While a figure under 1% might seem a modest, it represents an important achievement, in that production outpaced population growth. India's positive performance in this period stands out in contrast to Bangladesh (-2.4% exponential drop) which experienced difficulties after separation from Pakistan. India's performance also compares favourably to that of Zimbabwe, whose exponential drop in per capita consumption of butter & ghee was nearly as poor as that of Bangladesh. Fortunately, Zimbabwe's consumption improved after the settlement of the civil war in the early 1980s, and the establishment of dairy development

Fig. 14


Butter & Ghee per capita Consumption
1961-92 exp.gr.: Agrostat/FAO/94
WORLD: -1.1%
green: no data
+2.3% to +10.3% (25)
+0.2% to +2.3% (33)
-1.6% to +0.2% (29)
-10.3% to -1.6% (29)
ex-USSR (to 1990): +2.4%
China: no data
India
+0.7%
Bangladesh
-2.4%
Pakistan
+0.2%
Turkey
-1.9%
Egypt
+2.2%
Zimbabwe
-0.2%

programmes there which Shanti George noted for their admirable aspects such as sensitivity to local conditions, compared to Operation Flood in India.[34] Pakistan's exponential growth in 1961-92 was just 0.2%, but should not be discounted because it began at a higher base and remained above Indian levels of intake of butter & ghee. Much the same could be said of Turkey, which began in 1961 with very high levels (3.3 kg. per capita) of butter & ghee intake, but experienced negative consumption growth of -1.9% thereafter, eventually plateauing at 2.2 kg. per capita in 1990-92, below the level of Turkey. Egypt, which began with butter & ghee per capita consumption (at 1.6 kg.) barely over the world average (though 50% above India's intake: see chart **Fig. 13**) in 1961, has experienced a strong 2.2% exponential growth, likely due to petrodollar loans in the mid-1970s, and US concessionary sales under PL 480 since around the time of the Middle East peace settlement with Israel in the late-1970s. It is noteworthy that unlike consumption of butter & ghee in Egypt, more of India's consumption is produced domestically.

Butter & Ghee kilograms per capita Intake maps for 1961 & 1992

Two of these maps **(Fig. 16/1961 and Fig. 18/1992) focusing on India's performance** relative to comparable developing countries are found in adjoining pages. Two similar maps found in the **appendix (Fig. 17/1961 and Fig. 19/1992 for all countries)** feature intake statistics for most of the world's countries and could, along with companion maps on milk ex. butter, form the basis for other study: several interesting patterns can be found, e.g. the rise of dairy consumption in the Pacific Rim, probably owing to a combination of exports from Australia, New Zealand and the US.

But here our focus is on India. Because ghee has always been one of the most important items in the national diet, the maps labelled *Butter & Ghee kilograms per capita Intake* for 1961 **(Fig. 16 India focus)** and for 1992 **(Fig. 18/India focus)** are some of the strongest evidence that Indian dairy development increased the country's

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[34] Shanti George (1994) *A Matter of People: Co-operative Dairying in India and Zimbabwe*: pp 511-512, 516,-517, etc. George writes that Zimbabwe's programme is less rigid than India's which strictly adhered to the Kheda or Anand pattern. George found (p 516) that Zimbawe's Dairy Development programme (DDP) "encountered many of the same problems that Anand did" in trying to extend benefits to the very poor. George concluded that, as in India's OF, in Zimbabwe's DDP, "The benefits of dairy development have generally been proportionate to the resiurce bases of rural households, since cattle ownership characterises the more affluent." Nevertheless, George found that in the Chikwaka area "...the

food security during the White Revolution. Of course these aggregate figures for per capita intake tell little of the consumption rates for landless and marginal groups in the hinterlands, or the poorest urban dwellers. But higher per capita rates of intake (at 1.2 kg. per person in 1992 compared to just 1.0 kg. in 1961) increase the likelihood that entitlements will increase for even the poorest quintiles. Once again, India's performance is enhanced by the less fortunate figures for comparable countries. Butter & ghee consumption in Turkey fell about one-third, while in Zimbabwe, suffering first trade embargo (when Rhodesian left the British Commonwealth in 1965) and then civil war, consumption fell about 40% to the low level of 0.3 kg. per capita butter & ghee intake. Even more disturbing is the fall in butter & ghee consumption in Bangladesh, from 0.19 kg. in 1961 to about half that, or 0.1 kg. in 1992. Fortunately for Bangladesh, food security for its rapidly growing population is increasing, as rice production in its own Green Revolution nears self-sufficiency, although Shaw & Clay note that there are "low levels of food intake among the poorest 60% of the population."[35]

These maps **(Fig. 16/1961 and Fig. 18/1992)** also reflect continuing high levels of intake in Pakistan, whose already high domestic production was probably augmented by food aid from the US in the decade after the invasion of Afghanistan by the USSR.[36] Egypt's per capita intake of butter & ghee also jumped from 1.6 kg. in 1961 to 2.2 kg. in 1992, but as the horizontal chart **(Fig. 4)** shows, Egypt availed itself of a higher level of imports of milk excluding butter during this period, and a check of the Agrostat/FAO database shows that Egypt received dairy aid including SMP, butter oil and other dairy products from the US and the EEC through 1992. But perhaps the most historically significant shift of intake **(Fig. 16 and Fig. 18)** is shown by China. Just as a journey of a thousand miles begins with one step, it may be that China's acceptance of dairy products such as butter & ghee began with an intake rise from zero in 1961 to one-tenth kilogram per person in 1992.

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local sales of milk have increased dairy consumption among some of the poor." And the "milk centre and its activities" improved community morale at least in proportion to their nutritional contribution.

35 Shaw & Clay (1993) *World Food Aid*: pp 41-43. They write that food aid (with non-cereals aid of mostly "edible oils, with small quantities of dairy commodities" was "crucial" in the first decade of Bangladesh independence, but was playing a "more modest role" by 1988-90.

36 Some of Pakistan's business leaders reportedly claim that martial law imposed by PM Zia helped increase economic growth, but their opponents ascribe all that growth to US aid during the Afghan War.

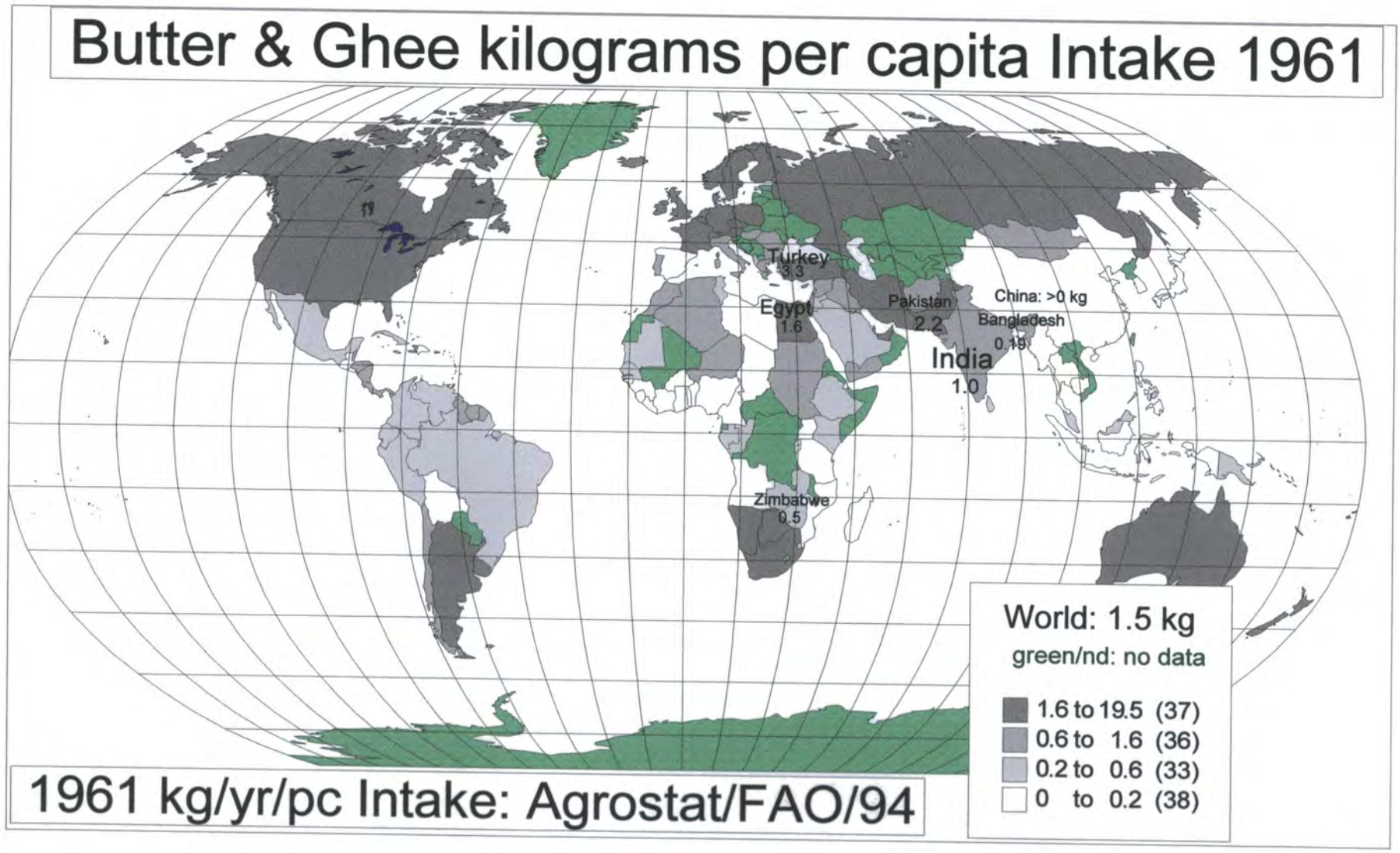
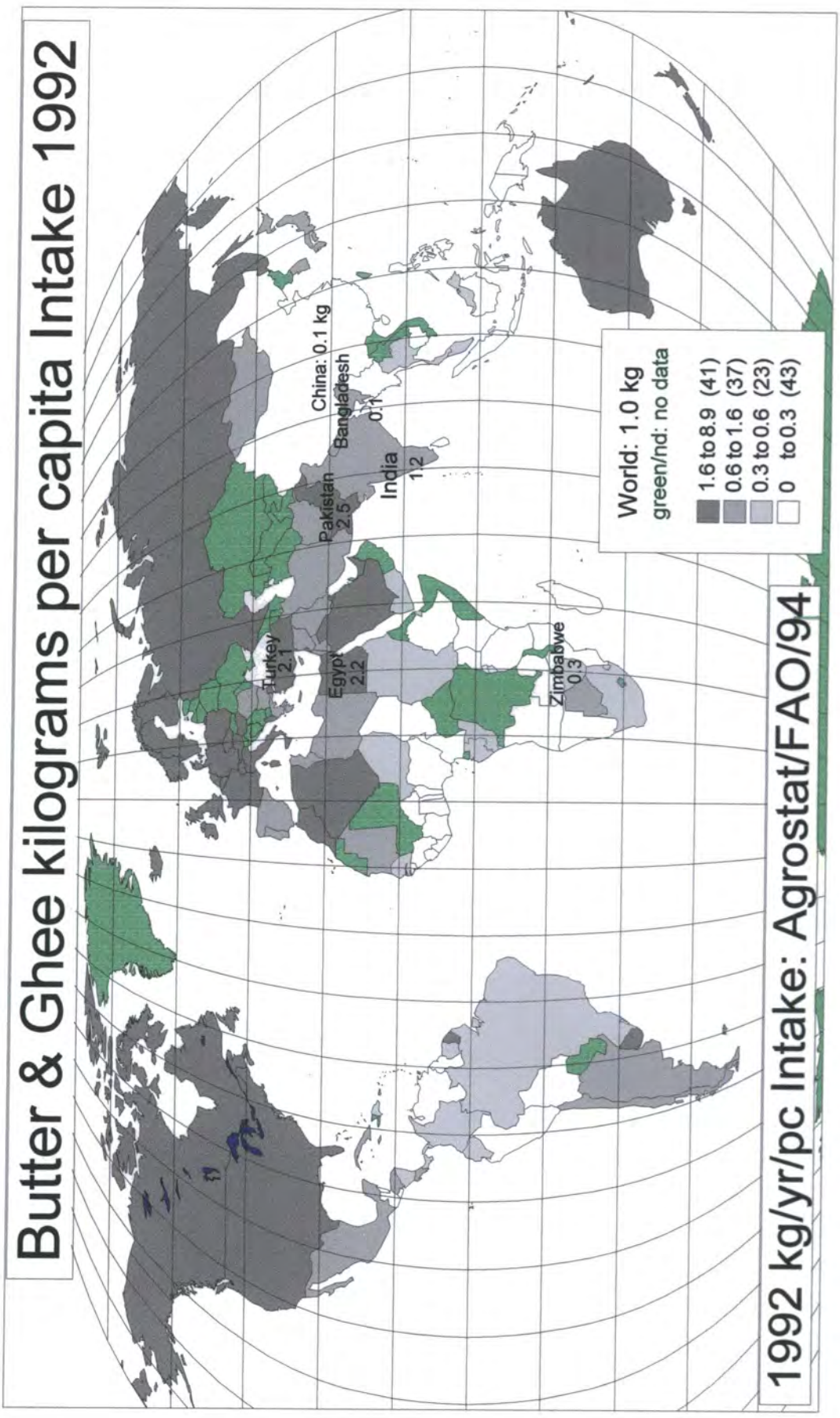

Butter & Ghee kilograms per capita Intake 1961
Turkey
3.3
Egypt
1.6
Pakistan
2.2
China: >0 kg
Bangladesh
0.19
India
1.0
Zimbabwe
0.5
World: 1.5 kg
green/nd: no data
1.6 to 19.5 (37)
0.6 to 1.6 (36)
0.2 to 0.6 (33)
0 to 0.2 (38)
1961 kg/yr/pc Intake: Agrostat/FAO/94

Fig. 16

Fig. 18


Butter & Ghee kilograms per capita Intake 1992
China: 0.1 kg
Bangladesh 0.1
India 1.2
Pakistan 2.5
Egypt 2.2
Turkey 2.1
Zimbabwe 0.3
World: 1.0 kg
green/nd: no data
1.6 to 8.9 (41)
0.6 to 1.6 (37)
0.3 to 0.6 (23)
0 to 0.3 (43)
1992 kg/yr/pc Intake: Agrostat/FAO/94

Milk ex. Butter per capita Consumption exp. gr. 1961-92 maps

Exponential growth of per capita consumption of milk excluding butter is shown by maps **(Fig. 20 India focus)** and **(Fig. 21 for all countries in the appendix)** titled *Milk ex. Butter per capita Consumption exp.gr. 1961-92.* The overall world rate for consumption of milk ex. butter is positive (0.2%) unlike that for butter & ghee which was negative (-1.1%).

One reason for this may be that health conscious consumers in rich countries have cut butter out of their diets while continuing to favour milk in liquid form as well as ice cream, etc.

In our comparison group, India (1.9%) once again shows a high rate of per capita consumption growth compared to Bangladesh (0.4%), Egypt (0.8%), and Pakistan (0.1%) and Zimbabwe (-0.2%).[37] Turkey (-0.6%) is in the lowest quartile of colour shading shown on the map, reflecting the downward consumption exhibited in chart **Fig. 13**. Interestingly, Sri Lanka (1.9%) shows identical growth in consumption to India in **Fig. 20.**

Although China (3.7%) and South Korea (9.9%) started from a low consumption base, their high rate of exponential growth is significant because of the large populations in these emerging economies, entailing large supplies needed to meet even a small change of taste in diets.

[37] The fact that Zimbabwe's figure for milk ex. butter is the same as for butter & ghee engenders speculation that, as Agrostat/FAO literature acknowledges, the difficult decades experienced by Zimbabwe have not made for easy data gathering. Thus, the figure for Zimbabwe - as for other countries where researchers depend on government estimates - may be somewhat of a "guesstimate".

Fig. 20

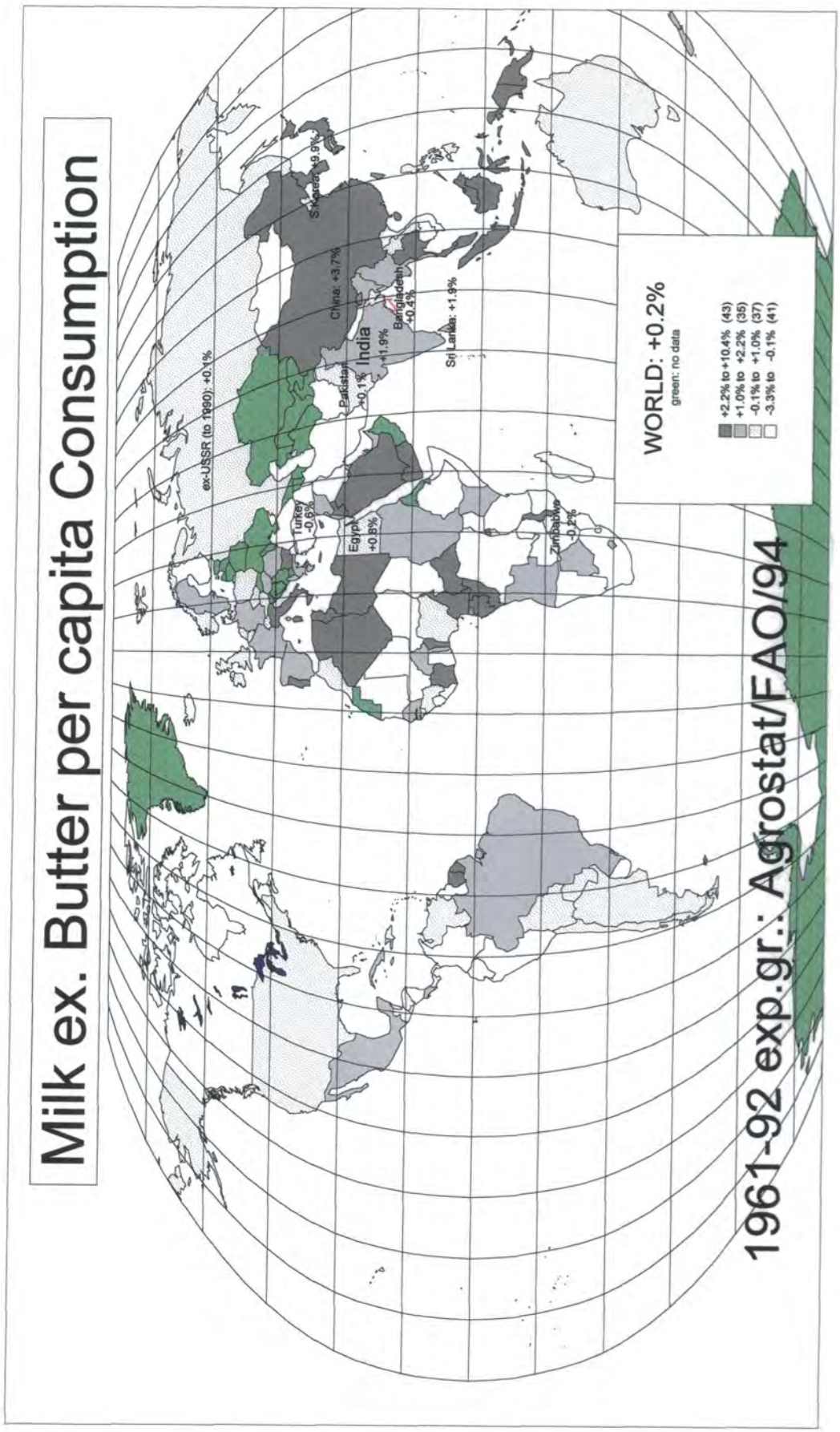

Milk ex. Butter per capita Consumption
ex-USSR (to 1990): +0.1%
S.Korea: +9.9%
China: +3.7%
India
+1.9%
Pakistan
+0.1%
Bangladesh
+0.4%
Sri Lanka: +1.9%
Turkey
-0.8%
Egypt
+0.8%
Zimbabwe
-0.2%
WORLD: +0.2%
green: no data
+2.2% to +10.4% (43)
+1.0% to +2.2% (35)
-0.1% to +1.0% (37)
-3.3% to -0.1% (41)
1961-92 exp.gr.: Agrostat/FAO/94

Fig. 22/Map: Milk ex. Butter kilograms per capita Intake maps for 1961 & 1989

These maps (based on the 1990 version of Agrostat/FAO) testify to progress in Indian food security. Two of them **(Fig. 22/1961 and Fig. 24/1989) focusing on India's performance** relative to the comparison group are found in nearby pages. Two similar maps found in the **appendix (Fig. 23/1961 and Fig. 25/1989 for all countries)** feature milk ex. butter intake statistics for most of the world's countries. India is again the star of our comparison group. While Pakistan suffers a slight drop in its high level of per capita consumption from 1961 (93.9 kg.) to 1989 (92.8 kg.), India increased its consumption nearly 40% from 1961 (38.7) to 1989 (54.1 kg.). Egypt rose slightly from 1961 (32.5 kg.) to 36 kg.) in 1989, but Zimbabwe lost nutritional ground, from 1961 (21.8 kg.) to 1989 (18.1). And India's neighbour Bangladesh fell from 1961 (9.6 kg.) to 1989 (9.2 kg.). Agrostat/FAO shows that demographics were partly to blame for lessening dairy product availability in Bangladesh: the 1961-93 exponential growth of Bangladesh milk production (1.8%) lagged far behind population growth (2.7%).

The 1994 version of Agrostat/FAO is in agreement with the 1990 version, and also reveals additional newer data: overall, Indian per capita milk ex. butter consumption increased dramatically from a steady ca. 35 kg. in 1961-77 right up to a high of nearly 60 kg. a year in 1992. Other statistics point to a sharp improvement in India's dairy fortunes after the beginning of Operation Flood. India "total milk production" (in Agrostat phrasing) had poor exponential growth before OF began (i.e. just 1.0% in 1961-71) which lagged behind population exponential growth (of 2.3% in 1961-71). It is no mystery why India suffered milk shortages in the 1960s.

Agrostat/FAO/1990 shows rapid progress in India thereafter: exponential growth in total milk production of (5.2% in 1972-93) running past population exponential growth (2.1% in 1972-93). Thus, even had Indian population growth not fallen slightly (from 2.3% to 2.1%), the 5.2% exponential growth in total milk production would have increased per capita milk supplies - Thomas Malthus would be pleasantly surprised to have his dour predictions on food and polulation growth refuted. In the milk-deficit-decade of the 1960s, Indian total milk production had held at about 20 thousand MT, but after OF began it rallied, and by 1993 it tripled at 63 thousand MT. India was winning its White Revolution.

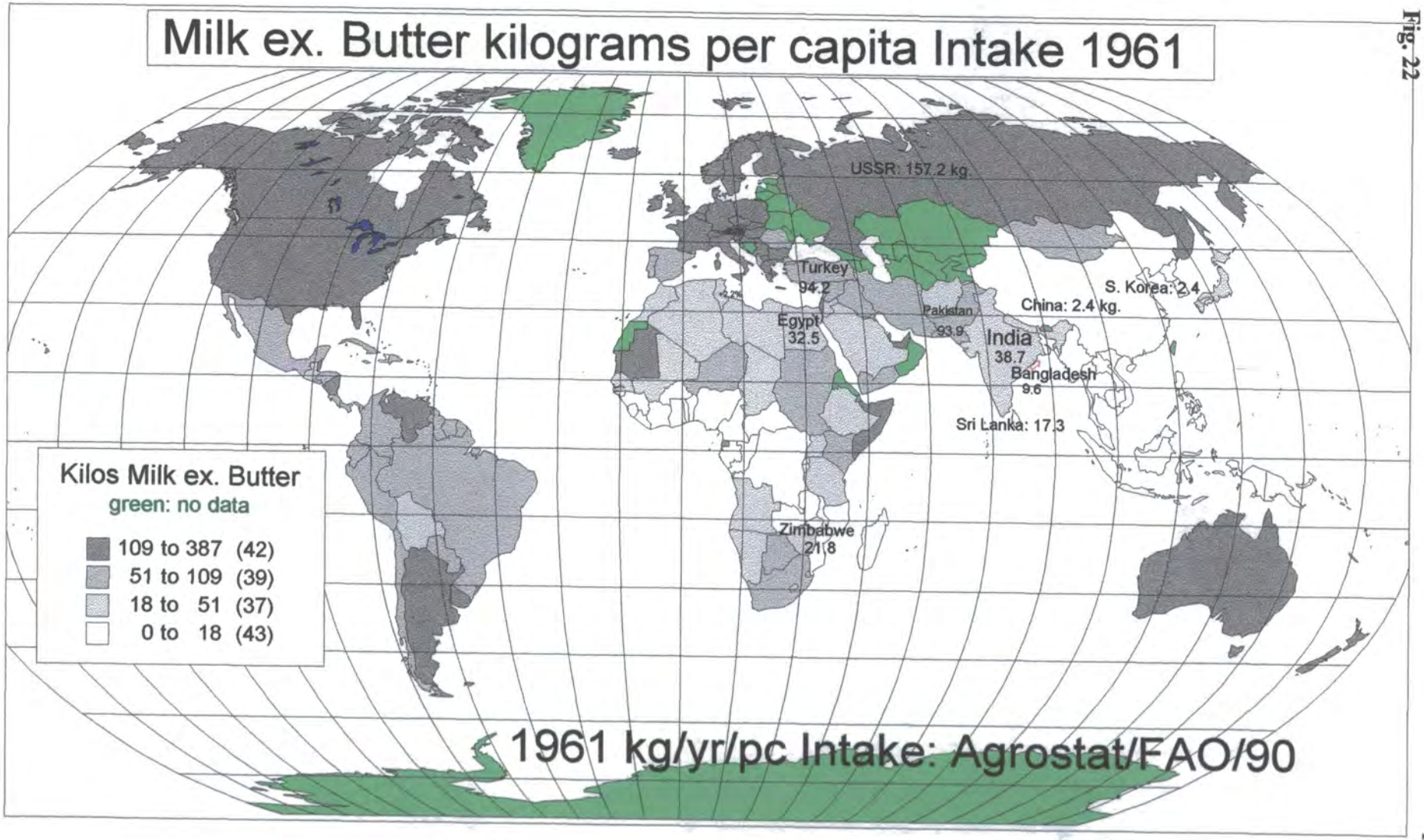

Milk ex. Butter kilograms per capita Intake 1961
USSR: 157.2 kg.
Turkey
94.2
Egypt
32.5
Pakistan
93.9
China: 2.4 kg.
S. Korea: 2.4
India
38.7
Bangladesh
9.6
Sri Lanka: 17.3
Zimbabwe
21.8
Kilos Milk ex. Butter
green: no data
109 to 387 (42)
51 to 109 (39)
18 to 51 (37)
0 to 18 (43)
1961 kg/yr/pc Intake: Agrostat/FAO/90

Fig. 22

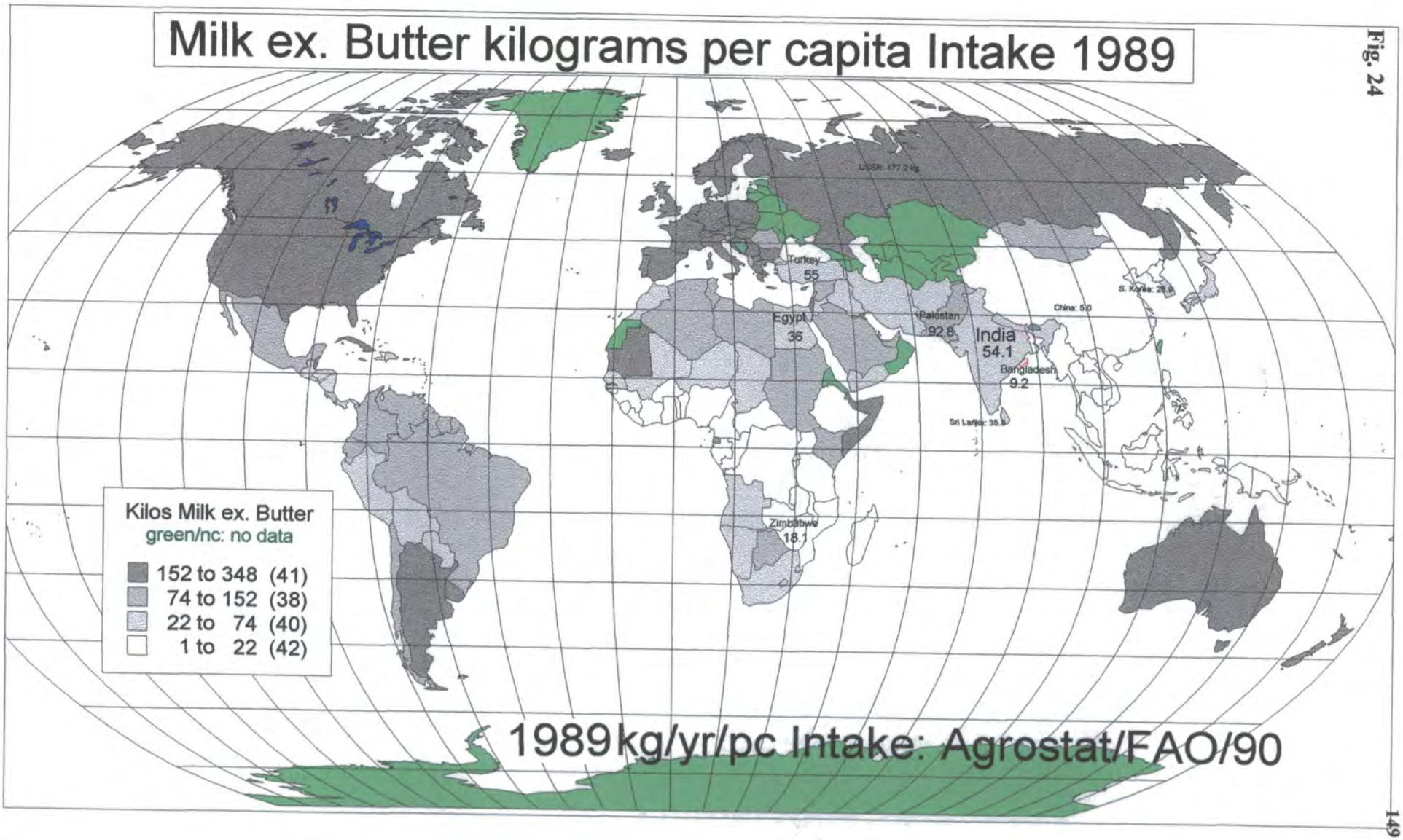

Milk ex. Butter kilograms per capita Intake 1989
USSR: 177.2 kg
Turkey
55
S. Korea: 28.9
China: 5.0
Egypt
36
Pakistan
92.8
India
54.1
Bangladesh
9.2
Sri Lanka: 35.8
Zimbabwe
18.1
Kilos Milk ex. Butter
green/nc: no data
152 to 348 (41)
74 to 152 (38)
22 to 74 (40)
1 to 22 (42)
1989 kg/yr/pc Intake: Agrostat/FAO/90

Fig. 24

Other developments of interest include a precipitous 42% drop in milk excluding butter per capita intake by Turkey from 1961 (94.2 kg.) to 1989 (55 kg.), due to cuts in all forms of dairy aid from all donors, including the EEC after its milk quotas began in 1984. The maps **(Fig. 22/1961** and **Fig. 24/1989)** focusing on India's performance (as well as **Fig. 23** and **Fig. 25** in the appendix) reveal much else. But even a short summary should note the jump in South Korean consumption 1961-89 by nearly 11-times (from 2.4 kg. in 1961 to 24.9 kg. in 1989). However, in absolute quantities, China's doubling of milk excluding butter intake in 1961-89 (from 2.4 kg. to 5 kg.) invites speculation as to how far China's one billion people will develop their taste for dairy products.

Conclusions of Chapter 3

While China's small consumption rise might be the murmur of a waking dragon, there was no doubt that India roused its dairy industry from the torpor of the 1960s in a straightline rise to a leading role among world dairy producers. *No doubt?* Hardly. Critics of India's Operation Flood such as Claude Alvarez claimed the White Revolution was a "White Lie" and that consumption increases relied on EEC dairy aid. Shanti George was hardly less brutal in her comments, and Martin Doornbos and his fellow researchers at The Hague called OF a failure, in which almost one-third of the throughput in formal cooperative processing plants was due to EEC dairy aid.[38]

In retrospect these charges, made a decade before the Agrostat/FAO data were available (and presented in the charts and maps of this chapter) are understandable - but essentially mistaken.[39] Chapter 4 relates additional details of how, despite problems and mistakes, Operation Flood made steady progress toward Indian dairy autonomy.

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[38] M. Doornbos, P. van Stuivenberg & P. Terhal (November, 1987) "Operation Flood: impacts and issues" in *Food Policy*.

[39] P.J. Atkins (August, 1988) "Rejoinder: India's dairy development and Operation Flood" in *Food Policy*.

CHAPTER 4: THE CASE HISTORY OF OPERATION FLOOD (OF) IN INDIA

Introduction

Although dairying is sometimes criticised for supposedly squandering the food value of plants in cattle fodder when plant matter theoretically could provide more nutrition to people than milk products, the suitability of dairying for many areas of the world is beyond dispute. In areas where arable farming is impossible, dairy animals can add to the net food security of people by transforming plants and crop wastes inedible to humans into milk.[1] Harold Alderman notes:

> In regions which are hilly or semi-arid, a concentration on pastoralism is in keeping with the ecological resource base. In other, often more favoured regions, the proximity of urban markets provides a demand for dairy products and, hence, may encourage investment in dairying.[2]

These are among the reasons why by 1988 the WFP had approved dairy development projects in 30 countries, and 16 of them were already being implemented in 1987 - equal to about 8% of the total value of WFP efforts. The WFP admits dairy projects are among the "most challenging" of development projects because they take a long time to achieve their goals (e.g. improved genetics, fodder base, production and consumption rises) and whatever the indigenous soil, climate and social background:

> longer-term success...depends on a variety of technical, ecological, social, economic and political factors, at both the micro and macro levels.[3]

WFP officials judged India to have many areas suitable for dairying, so it cooperated with the Government of India (GOI), the EEC and other bodies in Operation Flood (OF), the biggest dairy development programme in the world. OF has been attacked *via* all the factors noted in the above citation - plus feminist critiques - and more. Nevertheless, although some dairy efforts fell awry to changing political conditions (e.g. in Afghanistan after the Soviet invasion in 1979), or recognition that ecological, spatial (*vis-à-vis* marketing to urban centres) or political factors left them still-born,

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[1] *Hoard's Dairyman* (January 10, 1995) "A world of feed for cows": p 14.
[2] Harold Alderman (1986) *The Impact of Cooperative Dairy Development in Karnataka*.

Operation Flood (OF) endured from the early 1970s into the 1990s. Although OF operations affected only about 1% of the total milk supply of India, the programme had far-reaching effects on dairy infrastructure, production and consumption.

This chapter will present additional evidence (from Agrostat/FAO/1990 & 1994, etc.) that, following the doldrums of the 1960s, the heavy capital investments made possible by OF, extending into the 1990s, contributed to growth in Indian dairying that (while not meeting all the demands of special interest groups) is impressive in comparison with the dairy performance of other developing countries.

Martin Doornbos, and his colleagues from the Indo-Dutch Studies on Alternative Development series were again a valuable resource for this chapter, as were many others including Harold Alderman, P.J. Atkins, John Empson, M.V. Kamath, and Shanti George. Analysis of OF can be valuable because, although each dairy project is unique and "country-specific", the WFP points out that all share factors that "can be addressed by a common policy perspective." As this chapter relates, one of the principal questions on dairy development (and on the Anand model in OF in particular) is how to discern which aspects are transferable from one locale to another.

Whether or not dairy aid continues to be a major part of international food aid projects, insights from an analysis of Operation Flood also have implications for commercial development of dairying in other countries.

In sections below, we shall summarise overall aid to India and the three phases of the implementation of OF. We will examine views supporting and opposing OF, both within and without India, and the interplay of these critiques on the evolution of OF. References will be made to Agrostat/FAO data, such as that presented in the last chapter, in which we compared the dairy performance of India to Bangladesh, Egypt, Pakistan, Zimbabwe and other countries. And in the light of recent data we shall draw some final conclusions on the role of dairy aid in India's White Revolution.

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[3] WFP 25th Session, Rome (April 21, 1988) "Food aid & dairy development": pp 1-16.

Origins of OF

The model for the cooperative dairy structure characteristic of Operation Flood (OF) originated in the Kaira district of Gujarat, roughly equidistant between Delhi and Bombay in 1945-46. Dilip R. Shah calls the co-op the Anand-Kheda Milk Producers' Cooperative Union[4], but it is also widely known as the Kaira District Cooperative Milk Producers' Union and by the acronym KDCPMU. The biggest coop in the district is AMUL[5] located at Anand, and by consensus became famous as "the Anand model". But there was to be little agreement about many other aspects of this historic cooperative.

The appropriateness of the Anand model for replication in other areas became a chief point of controversy. P.J. Atkins notes that Gujarat already was one of India's main dairying areas, although not specialised to the extent of Cheshire in temperate England.[6] A.S. Patel[7] as well as Shanti George[8] note that dairy development proceeded spontaneously in Gujarat, benefiting from a railway link to Bombay built in the 19th century, *before* establishment of the Anand structure that became the basic model for OF. A geo-economic link with Bombay was undeniably a boon to Anand. As Clive Crook wrote about Bombay (officially renamed Mumbai in the early 1990s):

> Mumbai...is to Delhi as Manhattan is to Washington, DC.[9]

Furthermore, critics like Shanti George and Claude Alvarez claimed OF was seldom successful at replicating the Anand model outside Gujarat; with some justice they condemned the single-mindedness with which OF proselytised the replication of the Anand model in parts of India that bore little resemblance to Anand. OF detractors like

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[4] Dilip R. Shah (1992) *Dairy Cooperativization*: p 67.

[5] M.V. Kamath (1989) *Management Kurien-Style*: pp 113-114. Kamath claims that despite conjecture, "There was no such thing as Anand Milk Union Ltd." Because KDCMPU was too unwieldy, a name competition produced "Amul" - associated with the Sanskrit word *Amulya* meaning invaluable or priceless.

[6] P.J. Atkins (1989) "Operation Flood: dairy development in India" *Geography* : p 259-262. My family home of Whatcom County, surrounding the SMP processing centre in Lynden, Washington, in the US is somewhat comparable to Cheshire.

[7] A.S. Patel (1983) "Cooperative Dairying and Rural Development: A Case Study of Amul" paper cited by H. Alderman *et al* in (1987) *Dairy Development in India*.

[8] Shanti George (1983) "Cooperatives and Indian Dairy Policy: More Anand than Pattern" in *Cooperatives in World Development* by D.W. Attwood and B.S. Baviskar (eds.), Delhi, OUP.

[9] Clive Crook February 22, 1997 "Survey of India: time to let go" in *Economist*; with contributions from Charles Collyns of the IMF, Robert Zagha of the World Bank, Jeffrey Sachs *et al* of the Harvard Institute for International Development, and Adit Jain of EIU in Delhi: p 10.

George and Alvarez also attributed (again with at least some justice) any apparent successes of OF to the advantage of government favour, sealed by PM Nehru's public embrace of Dr. V. Kurien at the opening of a SMP plant for buffalo milk in 1955, continuing under PM Shastri in 1964, and on with the patronage of the Congress party under Indira Gandhi. Critics both in and outside India complained of over-optimism - if not outright dissembling - in official OF reports.

Many components of OF are typical of "top-down" programmes, in that it was imposed by OF authorities under the auspices of the Indian federal government on a vast, heterogeneous country, sometimes taking over dairy programmes previously established by the states. Although the WFP officially called OF a project, it utilised amounts of donated (dairy product) food aid as impressive as in the surplus disposal programmes of the 1950s and 1960s, in international agreements often signed in the capital of Delhi. But OF also had components that could be described as "bottom-up". Harold Alderman says that, like most forms of dairy development favoured by the World Bank, OF promoted surplus rural milk "as if it were a cash crop".[10] If rural production could be increased, and the logistics of transport to urban centres overcome, subsistence farmers could be integrated into the cash economy, while increasing nutritional supplies in both urban and rural sectors.

A "top-down" programme to defend India's dairy autonomy?

Many arguments have been and still are marshalled against the "top-down", centrally-planned - inefficient Public Sector Enterprises (PSEs)[11] that dominate almost all production employing more than 100 workers in India. Operation Flood, by contrast, was one "top-down" programme that was fortunate to enjoy measures of flexibility and autonomy not always enjoyed by managers of highly regulated industries as steel.

OF has always benefited from a vigorous team of managers guided by Tribhuvandas K. Patel and (most prominently) Dr. Verghese Kurien. As a cooperative representing private dairy farmers, Anand resembled what now in Britain is called a QUANGO - a

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[10] Harold Alderman (1986) *The impact of cooperative dairy development in Karnataka*: p iii.

quasi-non-government organisation. While farmer participation - indeed democracy - were ideological themes in the promotion of OF in the field, and Kurien *et al* were constantly open to feedback from villagers, the project was led from the top by technocrats. P.J. Atkins described the Anand model as "a combination of top-down planning and bottom-up participation."[12] But detractors complained of too little participation of farmers in planning, charging, for example, that no small farmers served on the Indian Dairy Commission that oversaw OF.

Although government patronage remained strong until the demise of the Congress Party in the 1990s, much OF success can be traced to decisions made by Dr. Kurien, who was already a nationally-known leader of the Anand cooperative nearly two decades before OF-I began. OF supporters claim that Kurien, who came to personify OF, resisted the overmanning and waste that scuttled other top-down, government sponsored programmes (e.g. speciality steels[13]). But detractors in- and outside government were suspicious (or envious) of Kurien's autonomy, both in control of OF's impressive budget, and in the fact that he managed OF from Anand, far from Delhi.

Because of the unique nature of (ultra-perishable) liquid drinking milk, micro- and macroeconomic efficiencies could be gained by a large-scale, top-down approach. Making and marketing milk is not like making tea kettles or shovels. Alden C. Manchester notes the essential differences between the dairy industry and other agricultural and non-agricultural activities:

> In many way, it is unique....The differences must be understood because they play a significant role in determining the effects of different public policies towards the dairy industry.[14]

Compared to other activities - even growing potatoes - milk production requires specialised inputs, buildings, skilled and continuous management. Manchester also

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[11] Clive Crook February 22, 1997 "A Survey of India: time to let go" in *Economist*: p 4. Crook cites India's well-intentioned capacity-licensing regime governing investment, production and labour relations as a chief culprit for laggard economic development.

[12] P.J. Atkins (August, 1988) "Rejoinder: India's dairy development and Operation Flood" in *Food Policy*

[13] (1989, 1990) Personal communication: Conversations (at IFMA exhibition, Cologne) with a bicycle manufacturer from India, who said he had to travel to Germany to purchase strong steel alloy fittings to complete bicycle frames because he claimed, "The subsidised steel industry in India has no incentive to produce them."

notes the difficulty of varying "the rate of output" of cow milk yield, the high costs of entry or exit from dairying, and the susceptibility of dairying to sanitation problems. Although Manchester was writing primarily about the modern US milk market, virtually all his points apply - albeit on a different scale - to milk production in rural India. Manchester could just as well be describing India when he writes:

> Instability is inherent in milk markets. Production varies seasonally largely for biological reasons and from day to day - neither type of variation is coordinated with changes in demand.[15]

Compared to medium-scale manufactures of, say, kitchen utensils or farm implements, where top-down, centrally-planned national management usually led to product stagnation (for example the demise of the electrical goods industry in the Eastbloc noted by Kazimierz Z. Poznanski[16]) due to lack of competition, and inefficient use of resources, a top-down approach was the most expedient way for India to meet rising demand for milk in the cities. The "milk famines" of the late 1960s demonstrated the inability of the traditional system of dairy farms located inside or on the peripheries of cities to provide a stable supply of pure milk to India's urban population. Such isolated enterprises could not cope with erratic milk supply, depleted by drought and disease, and their small capital base was inadequate to finance processing infrastructure and fast, hygienic transport to ship large quantities of milk from the countryside to cities.

The vulnerability of isolated small-scale milk producers in dairy systems (not members of cooperatives) is according to Manchester, typified by a small number of processors (inviting monopolistic price-squeezes). Therefore, Manchester suggests the desirability of:

> Long-term commitments by producers and processors...producer groups [which are] often able to reach more favourable terms than individual producers...a public agency...as an arbitrator between buyers and sellers, providing a measure of stability which they cannot provide for themselves.[17]

These suggestions for enhancing the welfare of the once poor and isolated dairy farmers of the US, strongly echo the rationale for Operation Flood in India. With a top-down

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[14] Alden C. Manchester (1983) *The Public Role in the Dairy Economy*: pp 3-8.
[15] Alden C. Manchester (1983): p 5.
[16] Kazimierz Z. Poznanski (1987) *Technology, Competition, & the Soviet Bloc*: pp 87-89
[17] Manchester (1983): p 8.

scheme under the aegis of Delhi, working with a network of farmer-cooperatives, OF could hope to:

(1) to raise the welfare of rural farmers by eliminating the control of the milk supply by village elites and petty dairy marketeers (who often doubled as moneylenders, but captured a disproportionate amount of the rents, or profits, from dairying);

(2) to raise production throughout the country;

(3) eliminate adulteration of milk, often with unsanitary water, that increased during the so-called milk famines of the 1960s; especially since, as Acharya & Yadav explain, "the prevailing market price of milk" was not "remunerative."[18]

(4) ensure the stability of milk supply to cities, *via* an interlinked National Milk Grid System (NMGS) able to meet excess demand in some markets with surplus milk drawn from others, while topping up the milk supply from buffer stocks[19] generated within India - as well as dairy commodities from the EEC and WFP;

(5) defend India's milk autonomy, by preparing for the donation of massive quantities of EEC dairy aid with a consolidated national plan designed to (i) mitigate possible disincentives to Indian dairy farmers by (ii) investing the profits from donated commodities into the NMGS, which, in time would make it impossible for unadvised donations of dairy aid to ruin the price structures underpinning India's milk system.

However difficult to prove, the last point (5) may be the most important. Certainly it was a point of unremitting controversy, for many OF detractors feared that the very presence of EEC dairy commodities on Indian soil was evidence of the country's dependence on the EEC. Nevertheless, evidence exists that OF was (at least in part) a prescient, pre-emptive initiative by Indian dairy planners to turn what they saw as the inevitable flow (probably impossible to stop, given political conditions in Europe and India) of EEC dairy aid into investment toward Indian dairy autonomy. OF planners realised that food aid had reduced the food autonomy of some countries such as

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[18] Acharya & Yadav (1992) *Production and Marketing of Milk and Milk Products in India*: p 83. This study in Rajasthan found that that especially in the "unorganised market" , i.e. non-OF areas of Rajasthan, (i) farmers did not believe the market price of milk remunerative, and (ii) many farmers believed that "milk price received from them has no relationship with its quality and hence increase the quantity of milk (by mixing water) to get higher total return." This is evidence of the harmful effects of the rigid price controls deplored by Clive Crook and Jeffrey Sachs, noted in Chapter 3 of this thesis.

[19] Martin Doornbos *et al* (1990) *Dairy Aid & Development: India's Operation Flood*: p 124. Doornbos *et al* use the acronym NMGS.

Nigeria, which turned from indigenous grains to American wheat. So OF authorities sought to preserve their independence by playing off one donor against another. Doornbos *et al* write:

> At the time of negotiations of OF-III [Operation Flood, phase III], again, NDDB officials made it clear that if the EEC were reluctant to supply additional aid, India would switch to the USA, New Zealand or Australia for continued support to its dairy strategy. Thus, it would be incorrect to argue that in the case of Operation Flood, it is primarily the EEC which has been dictating any terms of incorporation.[20]

Although the following citations are lengthy they are noteworthy for their evidence of the fundamental logic and cleverness of OF plans - and planners. According to Doornbos *et al*:

> It has often been stressed that the basic motivation underlying Operation Flood has been precisely opposite to one that would have India surrender its autonomy in the field of dairy development in favour of an inclusion into an EEC-sponsored incorporation chain. Thus it can be argued that the programme's key objective has been to safeguard and strengthen autonomy in dairying vis-à-vis the incorporative designs of the EEC or other major dairy exporters, even if it had to be at the 'price' of the internal incorporation of India's organised dairy economy within the centralised Operation Flood framework.

Doornbos *et al* note the implicit threat that OF planners sought to defend against:

> The EEC, it has often been suggested by OF programme authorities, at one time had threatened to dump large quantities of surplus dairy commodities onto the Indian market. On the premise of a 'dumping threat', the safeguarding formula developed was that of an ingenious programme structure which, while accepting the EEC commodities as aid, would use them to finance the expansion of a national dairying infrastructure and keep Indian authorities firmly in control.[21]

Put another way: *Europe offered India a lemon, and India made lemonade.* By the time OF was established in 1970, the history of food aid was replete with instances where untimely food "donations" had benefited special interests in donor countries (by stabilising domestic prices, lowering storage costs, raising political prestige, etc.) - but harmed farmers, and ultimately consumers, in recipient countries by lowering market prices, and throwing indigenous food systems into disarray (from the loss of income, and uncertainty over future incomes, caused by superfluous food aid). Even if we assume perfect good will by all members of EEC negotiating teams, OF officials would have been wise to employ strategies to close the opportunity for special interests (e.g. an individual or firm trying to corner the European milk powder market - or even well-

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[20] Martin Doornbos *et al* (1990) *Dairy Aid & Development*: p 301.

[21] Martin Doornbos *et al* (1990): p 301. OF leader Dr. Verghese Kurien alluded to this threat in his response to critics titled *Black Lie*.

Fig. 26 *NMGS 1988*

National Milk Grid System (NMGS) 1988

Source: National Dairy Development Board (NDDB)
Anand, India

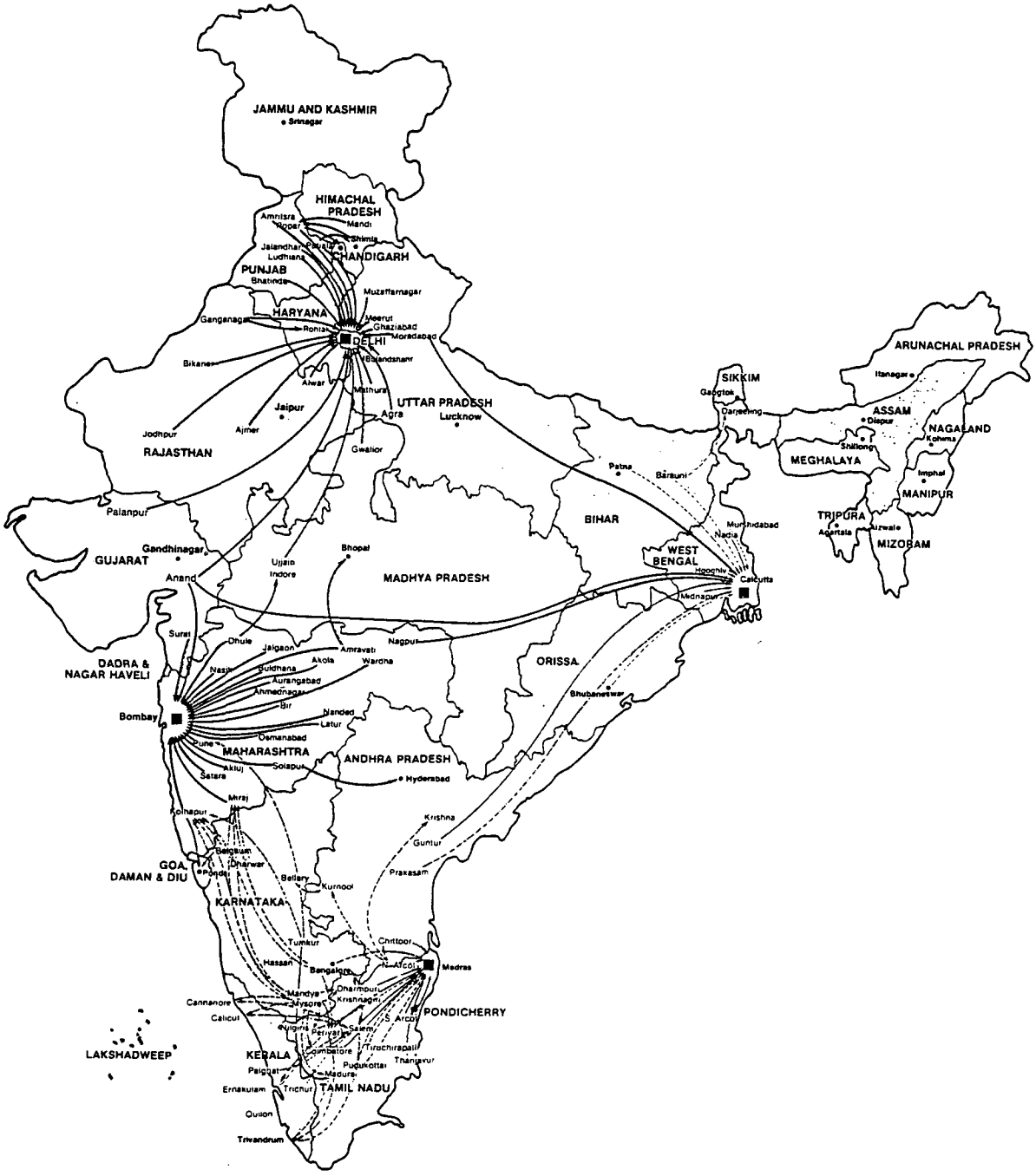
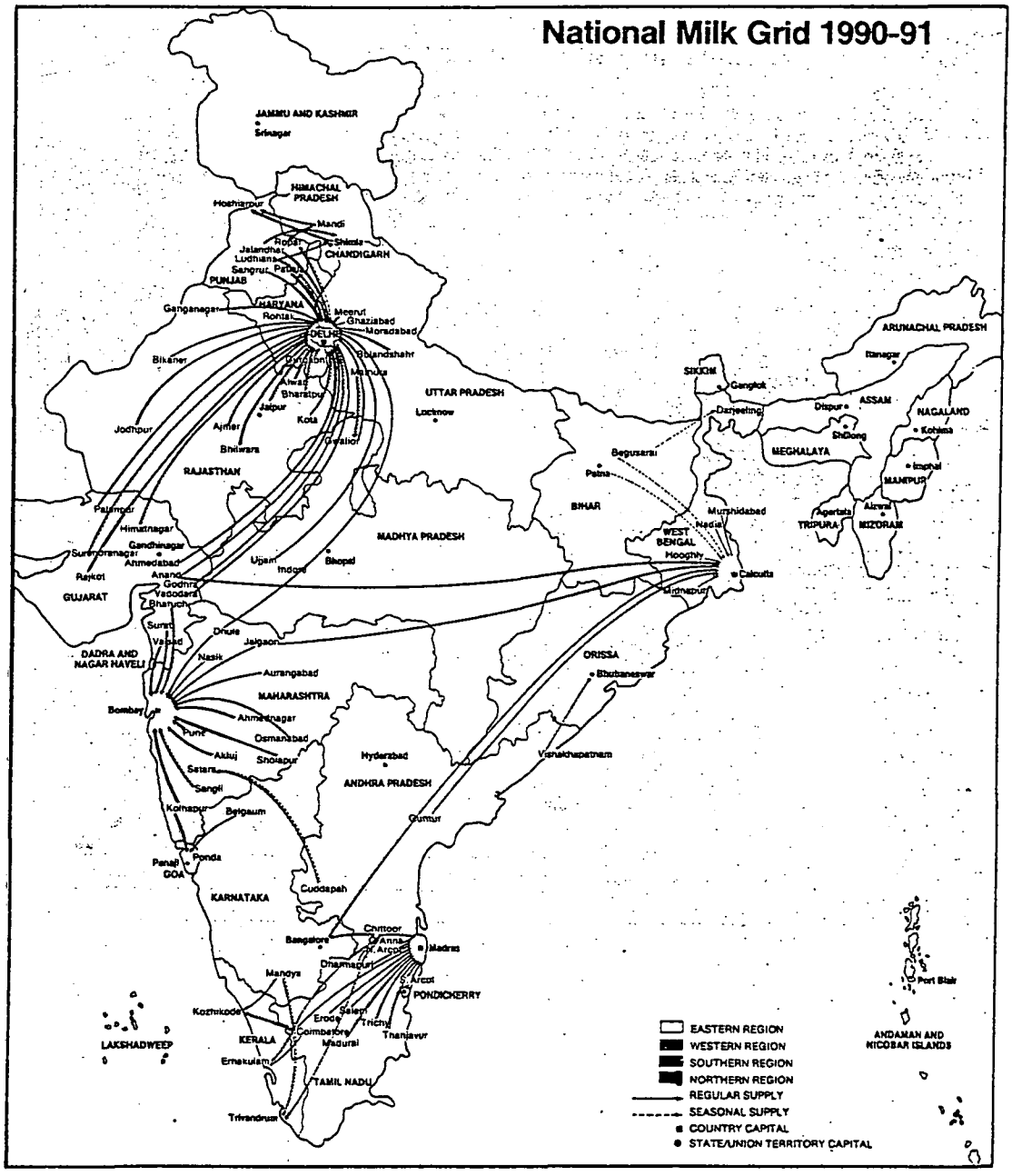


Fig. 27 ***NMGS 1990-91 (Source: NDDB)***



meaning EEC officials who simply were unaware of the potential dangers that untimely food "donations" pose to a recipient country). OF officials knew that a large gift of about 20 million MT could demolish dairy market structures in even its healthiest states. Like a giant snakebite, 20 million MT of SMP arriving in Bombay harbour could have paralysed dairy structures throughout the state of Gujarat. So OF negotiated a plan with the EEC and the WFP to "monetise" the dairy aid. In other words, OF would invest sales of scheduled shipments of EEC dairy aid into the National Milk Grid System **(See Maps: Fig. 26 *NMG 1988* and Fig. 27 *NMG 1990-91*; *Source*: NDDB)** which functioned as a metaphorical snakebite kit able to flush the initial entry point (or "wound" around Bombay and Gujarat), and disperse incoming dairy commodity gifts[22] throughout the Indian sub-continent, eventually making its price structures immune to future onslaughts of dairy aid.

In respect to a threat that the EEC might dump dairy aid on India, ruining part of its dairy structures, we can conclude that such a threat need not have been made explicitly or in earnest. Why? Because, just as nature abhors a vacuum, so does international trade. (We can assume that various private, governmental and semi-governmental *arbitrageurs* participating in international dairy trade continually seek to affect world commodities markets in ways that increase their net profits.[23]) That is, simple recognition by special interests on either side, in the EEC or in India, was enough to establish the *potential* for such damaging dairy aid shipments to be sent to India. Their destructive potential for Indian dairy development was the reason Shanti George (1985) termed EEC dairy aid a "Trojan Horse".[24] The best way to immunise the Indian dairy system against such threats was through administration of the NMGS. *Semper paratus.*

Ending 1960s' "milk famines"

Of course India faced more immediate worries than ships full of SMP and BO steaming from the EEC. Its immediate concern was to end the so-called milk famine, in which

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[22] Food aid sceptics would appreciate the irony in the facts that the German word *Gift* means poison, and that Germany was the largest contributor to EEC surpluses, *aka* the Butter Mountain.
[23] William Greider (1997) *One World, Ready or Not*: p 59, etc. Greider shows how arbitrage operates almost universally.
[24] Shanti George (1985) *Operation Flood*.

the traditional, unconsolidated supply systems failed to meet milk demand in India's urban centres in the 1960s. Meeting demand in growing urban markets *with consistency* over the waxing and waning of seasonal and annual supply **(See Fig. 28 *Final form of the Anand Pattern in the NMGS* below.)** required expensive improvements in modern processing centres, and in hygienic transport infrastructure, carrying milk between producers in the hinterland, and urban consumers. Although rural producers would likely react to growing urban demand with increased production in the medium- and long-term, Doornbos *et al* point out:

> Rather than as a strategy for increasing Indian milk production, Operation Flood has been designed as a programme for structuring the Indian milk market in a specific way....dairy aid has functioned, and still functions, as a physical input into the emerging dairy industry. As such, dairy aid provided by the WFP and the EEC has first of all served to establish the NMGS. This is one of the reasons why the programme has been dependent on commodity aid for so long.[25]

The National Milk Grid System took years to develop, and as the maps show **(Fig. 26 and Fig. 27 above)** major progress was still being made on the Madras-to-Calcutta milk transport route in the late 1980s, and improvements continue today. Certainly it was fortuitous that India's need for expensive capital investments, on a national scale, coincided with EEC dairy surpluses - as well as the political will and creativity, among GOI, EEC, WFP, FAO and OF officials, to seize the opportunities to advance Indian dairy development in a scenario fraught with peril to India's dairy autonomy.

The uniqueness of milk

P.J. Atkins argues that as a "valued perishable commodity" important to the nutritional and economic well-being of developing economies, "milk is a special case" that merits capital-intensive investment:

> where the long-term benefits which accrue to society outweigh the short-term benefits.[26]

Milk is different from cereals - not to mention non-food commodities such as coal or stainless steel because: (1) it has a constant, relatively inelastic demand; (2) but has to be produced on a twice-daily basis; (3) must be processed almost immediately after production on a farm; and (4) can be stored only for limited periods, usually at high cost. Milk is a world away from coal, widgets - or even wheat, which is storable for

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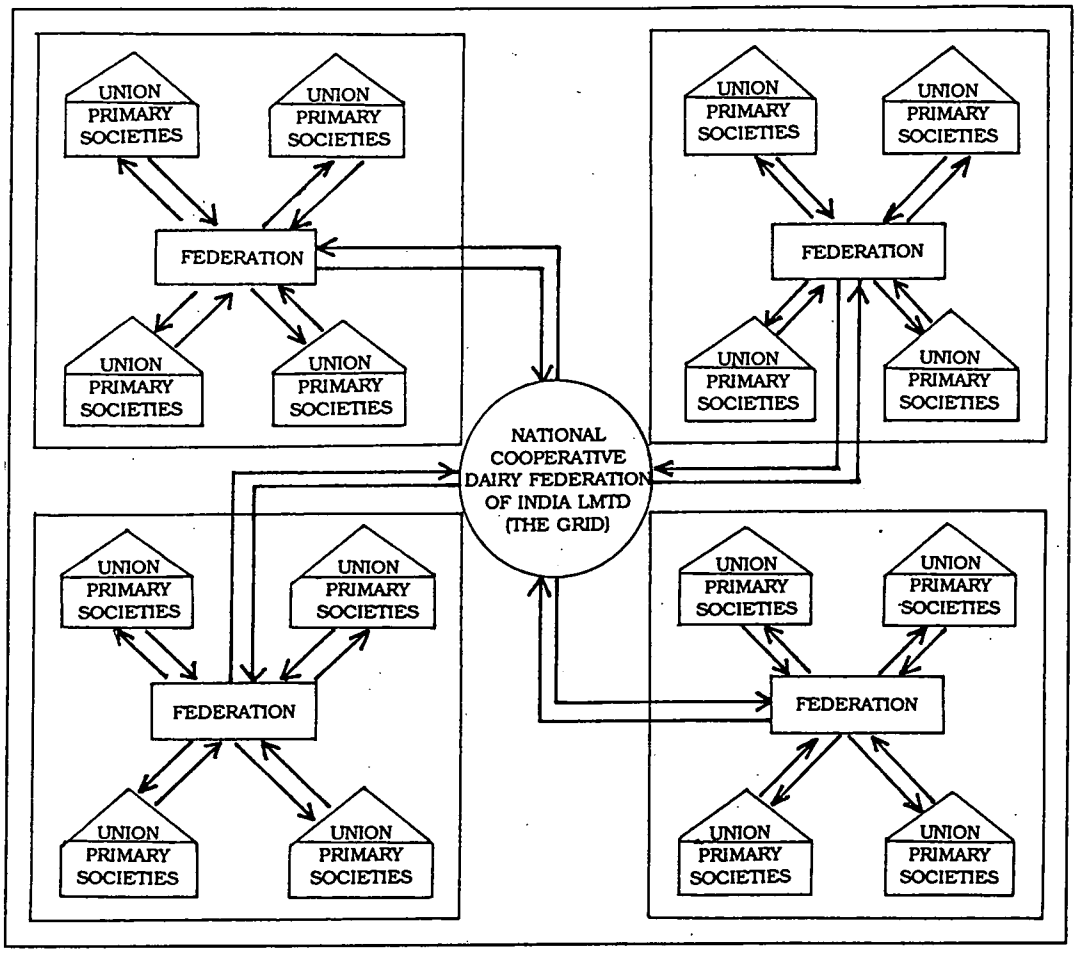
[25] Doornbos *et al* (1990a) *Dairy Aid & Development*: pp 124, 135. The overall variation in procurement of milk is about 1:1.8 and Doornbos says March is usually the relatively "flush" month.
[26] P.J. Atkins (1988) "Rejoinder: India's dairy development and OF" in *Food Policy*.

Fig. 28 *Anand Pattern*

Final form of the Anand Pattern in the National Milk Grid System (NMGS) incorporating "Mother Dairies" in Bombay, Calcutta, Delhi & Madras

Source: **National Dairy Development Board (NDDB) Anand, India**



several years. Furthermore, although demand for milk is fairly inelastic (notwithstanding the high income-elasticity of demand for milk among the poor in India), the supply is naturally elastic, according to regular seasonal changes as well as unpredictable droughts, fodder shortages and cattle disease. Harold Alderman says:

> Like many field crops, milk production is seasonal but, unlike grains for example, it cannot be stored in its "raw" form. Hence, product transformation is necessary in order to utilise flush season production effectively.[27]

Milk production is a labour intensive industry, apt for the large rural pool of surplus labour of India. At the same time, streamlining Indian infrastructure on a national scale posed sobering logistical challenges, requiring high levels of appropriate modern technology. It is doubtful that such large-scale investments would have been spawned as quickly by a "bottom-up" approach that sought to achieve its means only by on-the-ground approaches, e.g.: technical extension services, development of artificial insemination (AI), or even subsidised sales of fodder concentrates. Of course these methods would have increased milk supply in rural villages. But as the supply "trickled-up" to urban centres, too many of the gains (from what economists call expanding the "production possibilities frontier") would have been captured by middlemen, or simply lost as waste or spoilage due to poor transport or processing.

Because of the National Milk Grid System (NMGS), it may be more accurate to describe OF as a "flood-up" rather than "trickle-up" programme. Certainly, it is hard to imagine that "bottom-up" efforts could have vaulted India into what John Empson calls "the dairy big leagues" as quickly as did OF, and he notes that in 1974 India:

> then ranked with France or Germany, the two largest European producers but trailed well behind the USSR and the US, numbers one and two in the international production league. With a population at that time of 375 million, 15% of the world total, India had barely 5% of the world's milk production.[28]

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[27] Harold Alderman (1986) *Karnataka*: p iii.

[28] John Empson (September 25, 1993) "India joins the dairy big leagues" in *Hoard's Dairyman*: p 692. With 55.1 billion pounds (ca. 25b kg.) at the beginning of OF, Indian production rose to 121.3 billion pounds (ca. 55b kg) in 1991. *(N.B. Webster's notes 1 US long ton = 1.016 metric tonnes; 1 US pound = 0.454 kilograms. 1 metric tonne=2.2046 US pounds.)* Therefore, 1974 India production of 55.1b pounds = 24,993 thousand MT, correlating with Agrostat FAO figures of 24,500 thousand MT in that year. It should be remembered that FAO statistics from countries not enjoying the generally good record-keeping systems of India will vary in their accuracy.

Table 11

Agrostat shows milk growth in India's Operation Flood			
x 1000 MT	1970	1974	1991
India	20.8	24.5	58.4
France	22.8	24.6	26.4
Germany	28.2	28.6	29.1
USA	53.1	52.4	67.3
USSR	83.0	91.8	101.3

Source: Agrostat/1994/FAO/livestock/milk production

Nor is it likely that, without investment in convenient and efficient marketing technology such as vending machines[29] in urban centres, such reliable urban demand could have been generated. The efficiency of these machines helped hold urban milk price increases below general price rises, further strengthening the inelasticity of urban demand. This secure urban outlet for rural milk production gradually increased rural income security, as OF was weaned from dairy aid, and increased its reliance upon domestically produced milk.

What a difference a decade (or two) makes. Empson writes that by 1990-91, India's share of world population had increased to 16%, but its milk share *had more than doubled to 11%* (121.3 billion pounds/ ca. 55b kg.), to outstrip the *combined* production of France and Germany, threatening the number two status of the US, as well as the still-leading position of the ex-USSR. In two decades India's per capita availability of milk rose from 90.2 pounds a year (41 kg.) to 143 pounds (65 kg.) annually, according to Empson. With plans of 172 billion pounds by the year 2000, India may dislodge the US as the world's number two dairy producer, and perhaps threaten the production leadership of the ex-USSR countries in the next century.

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[29] *International Seminar on Dairying as an Instrument for Progress: the Indian Experience: Proceedings 1989*: pp 127-128. Published (1990) by NDDB (Anand 388 001 India) in association with International Dairy Federation (IDF), Brussels, Belgium. In a question and answer session, D. Tikku, of the Delhi Mother Dairy, said vending machines dispense an average 1300-1400 litres per day.

This has been accomplished to a background cadence of unceasing criticism, from both within and without India. On the macroeconomic level, detractors saw the rationale for food aid in OF as a reexertion of control by former colonialist powers, to make India dependent on surpluses generated by Europe's wasteful, subsidised agriculture. Harold Alderman riposted that argument saying:

> The magnitude of this aid raises the usual controversial questions of dependency and disincentives to domestic producers. However, this aid is also presented as an example of how to creatively use commodity aid to promote agricultural development.[30]

OF supporters reply that, on the macroeconomic level, India has gradually reduced imports of EU food aid, whilst increasing indigenous production.

On the microeconomic level, detractors criticised the importation of European breeds to hot India, and of high-tech processing equipment to an economy with a labour surplus. OF supporters argue that, on the microeconomic level, India settled for a middle way, between inefficient low-tech and expensive, insupportable high-tech. For example, OF utilised the intermediate technology of efficiently-insulated train cars (instead of costlier refrigeration cars used in the US and Europe) to transport homogenised milk to urban centres. This saved costs and functioned well enough for its purposes. Despite criticism by Claude Alvarez and Shanti George over OF's payments to a Swedish firm for setting up a Tetra Pak laminated paper plant, the tetrahedron-shaped milk cartons worked well in coin-operated dispensing machines, and Kurien claimed they used 20% less paper than brick-shaped designs.[31] When evidence for independence from dairy aid, or raised milk consumption or production wore thin, apologists for OF maintained that profits from higher-tech processing plants funded construction of a National Milk Grid System (NMGS)[32], which could stimulate economies of scale in transport infrastructure, which in turn could stimulate rural milk production increases, eventually resulting in better nutrition and economic vitality in villages as well as urban centres.

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[30] Harold Alderman (1986) *Karnataka*: p 11.
[31] M.V. Kamath (1989) *Management Kurien Style*: p 340. Tetra Pak became a political football between nationalists and free traders.
[32] Doornbos and some others refer to the NMGS. P.J. Atkins uses the shorter acronym NMG.

The simplistic breakdown above is offered to give the general outlines of the OF debate, which all too often bore too little relation to reality. More details will be examined throughout this chapter.

OF similarity to the MMB in the UK & cooperative structures in the US

In fact, OF may be an example of a "top-down" dairy marketing structure that in some respects is transferable between differing geographical circumstances. OF resembles Britain's Milk Marketing Board (recently superseded by privatised structures such as Milk Marque), which was established in England, Wales, Scotland in 1933-34, and in Northern Ireland in 1955.[33] The goals of OF scarcely differ from those of the MMB, which were to improve regular supply to the cities; to improve hygiene by policing adulteration, to fight diseases such as tuberculosis[34] that had been endemic in British herds for many years, and to improve the welfare of farm families formerly at the mercy of *laissez-faire* price-cutting by commercial milk processors.

It can also be argued that OF is simply a larger version of the local dairy coops such as Darigold in the Pacific Northwest of the US, that grew into large regional farmer-owned coops after the end of WW-I in 1918.[35][36] Their implementation, (owing much to

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[33] Ben Fine *at al* (1995) *Consumption in the Age of Affluence*: pp 262-263.
[34] P.J. Atkins (September, 1996) "Mad Cows and Englishmen" in *History Today*.
[35] Alden C. Manchester (1983) *The Public Role in the Dairy Economy*: p 17. Manchester writes that, "Up until about 1880 [in the US], the competitive picture in fluid milk markets was largely one of atomistic competition. From then until World War I, large dealers dominated. Cooperatives became important in negotiating with dealers during and after the War."
[36] Darigold, Inc. (1993-1994) Publications, documents and personal communications from Douglas C. Marshall (corporate counsel) and Roger D. Miller (sales manager for products incl. milk powder. In 1993, the Darigold cooperative comprised 1400 dairy farmers, 1600 employees and projected $900m in sales in fiscal year 1992/93. Mr. Marshall wrote me (April 21, 1993 letter) that, "Darigold is the largest US processor of skimmed milk powder (which we refer to as dry milk powder, or NFDM)." Darigold exports large quantities of milk powder under the US government's DEIP (Dairy Export Incentive programme). In 1992, Darigold exported about 48 thousand tonnes (based on a given figure of 94,802,107) to countries including Kuwait, Panama, Trinidad/Ghana, Algeria, Chile, Brazil, Nigeria, Saudi Arabia, St. Lucia, Columbia, Egypt and Mexico.

In December 1992, Darigold DEIP sales of NFMP, WMP. butteroil (BO), butter, cheddar cheese and mozzarella cheese amounted to 155,486 MT, with a "total bonus value" of $140.3 million. In the documents I have seen (originating from darigold, Inc. and the USDA) no exports to India were recorded, suggesting either/or Indian self-sufficiency in milk powder, or continued hegemony of EU exporters in the Indian market. Shipments to Egypt, Jordan and Russia recorded in Darigold documents suggest synergy between US foreign policy and food export goals - in a pattern that this thesis traces to, at least, the end of WW-II. In fact, Marshall wrote me that, "the [US] State department is quite influential" in determining exclusion or eligibility of countries for concessionary DEIP dairy sales. Marshall added that:

government encouragement) accomplished much the same goals as the MMB in Britain and OF in India, including increases in consumer welfare, farmer welfare, milk hygiene, milk demand, milk supply and reliability of that supply through better infrastructure.

Organisation of overall food aid in India

In the decades after WW-II India was a proving ground for the three forms of food aid described in Chapter 2, and reprised here:

(1) Emergency food aid: provided on bilateral, multilateral and NGO bases in emergencies, such as the famine in Rajasthan.in 1968. Since then, India has admirably improved its "self-help" abilities. The US contributed 400,000 tonnes of maize for emergency poultry feed during the historic drought of 1987, but Delhi's own response, utilising stored food stocks, distribution systems and Calamity Relief Funds, was a dramatic demonstration of India's improved response to food emergencies in all regions of the country.[37]

(2) Programme food aid: phased out of India by 1978. Before then, India absorbed nearly 60 million tonnes of bilateral programme food aid from the US and Canada, in the years 1956-76, most of which was wheat and cereals, worth $4.8 billion in 1993 prices.[38] When the US government returned Rs16.8 billion in payments (for

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> DEIP sales for the fiscal year ending September 30, 1992 were "about 250 million pounds [ca. 114 thousand MT] most of it NFDM, compared to 873 million pounds [ca. 397 thousand MT] of US NFDM production. And Darigold's powder was about 95 million pounds [ca. 43 thousand MT] of the total."

Figures in [brackets] are my estimates from US pounds to Metric Tonnes (MT). Additionally, Marshall wrote that he believes original PL 480 provisions subsidising US dairy exports were discontinued during the 1960s:

> in response to pressure from certain allies, especially Australia and new Zealand. (I'm not sure why that policy changed, but understand that related to foreign policy considerations.)
>
> By 1985, that relationship had changed (especially with new Zealand), and congress was more interested in our dairy industry than theirs. The heavy EC subsidies had caused surpluses, and they had dumped their dairy products on the international market. The US realised that we would either have to follow suit or use the GATT mechanism to remove all subsidies so that all countries could compete on unsubsidised basis. That was the Reagan Administration approach to GATT, and DEIP was put into the 1985 Farm Bill at least in part to put pressure on other countries.

I am grateful to Marshall, Miller and Darigold for their input. I believe this information supports a contention of this thesis, that post-WW-II US agricultural policy has always been tied to foreign policy. For instance, it can be hypothesised that US farm export policy became more aggressive *vis-à-vis* New Zealand, after that country banned US nuclear weapons from its soil.

[37] Shaw & Clay (1993) *World Food Aid*: p 61-69

[38] Shaw & Clay (1993): p 59.

concessionary food grain sales) to the Indian government, after a 1974 agreement, some of the repatriated funds were reinvested in animal husbandry and dairy development, as well as irrigation, soil conservation and other projects benefiting agriculture in general. In the decade 1968/69 to 1976/77, Canada provided India with about $361 million (in 1993 prices) of programme food, comprising about three-quarters cereals, nearly one-quarter in rape seeds and oil, and the rest in skimmed milk powder. (India may have been a convenient outlet for surplus from Canada's milk quota system.)

(3) Project food aid: is aimed at income transfer to the poor, scheduled castes, tribes, rural poor, women and pre-school children, school lunches, and food-for-work (FFW) projects, etc.. India utilises both domestic food and donations from the WFP and other donors for FFW projects.[39] The country has a tradition of such schemes, notably MEGS - the Maharashtra Employment Guarantee Scheme begun in 1972. Other major FFW projects were initiated in 1977, 1980, 1983 and 1989.

Project food aid entirely phased out programme aid (in which wheat and rice were the chief commodities provided) in India after 1978. In some respects, this was recognition of: (1) economic progress made by the recipient country; (2) the benefits to both recipients and donors of food aid, and the mutual respect required in such relationships[40]; and (3) evidence that properly targeted project food aid posed fewer disincentives to Indian farmers, while offering potential rises in output and welfare rises in Indian dairying.

Food aid practitioners such as John Shaw and Edward Clay admit it is difficult to distinguish between *programme aid* and *project aid*[41], but say that *programme aid* is always donated on a bilateral government-to-government relationship (offering balance-of-payments support, etc.), while *project aid* effects income transfers to the poor if it is carefully administered by multilateral organisations such as the WFP. Targeted project

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[39] Shaw & Clay (1993) *World Food Aid*: pp 2, 68. Examples of successful FFW projects include road building in Turkey.

[40] M.V. Kamath (1989) *Management Kurien-Style*: p 162. The refusal of OF's Dr. Kurien to accept "mouldy milk powder and rancid butter oil" donations from Europe was a source of pride to his country-men - and a reminder to the EEC that its wasteful CAP subsidies were the *primum movum* of food "aid".

[41] Shaw & Clay (1993): p 2.

aid is also thought less vulnerable than mass programme food aid to illegal sales and other corruption. Shaw & Clay note the new trends in food aid:

> By 1992, vegetable oil and dairy aid to India comprised over 50% of food aid in terms of value - a remarkable change from the surplus disposal flows of 1950-70, when grain dominated aid flows.[42]

Table 12

Agrostat FAO: India: commodity composition of non-cereal food aid: 1977-88 (x Thousand MT)				
Year	Dried skim milk (SMP)	Other dairy products[a/]	Vegetable oil	Butter oil (BO)
1977	26.6	4.2	70.2	14.0
1978	43.2	5.6	96.1	11.1
1979	41.7	5.2	77.6	16.8
1980	28.1	4.8	57.5	23.6
1981	72.7	6.8	54.7	23.6
1982	36.4	2.9	37.7	8.2
1983	13.1	9.0	52.0	1.4
1984	69.8	12.7	69.6	27.5
1985	10.2	10.3	44.3	4.2
1986	4.1	11.0	100.0	3.8
1987	27.2	15.9	57.8	6.4
1988	20.2	15.3	111.4	13.9
[a/] Includes dairy component of blended foods (*Table source:* Shaw & Clay 1993: p 62)[43]				

WFP gradually refined its methods of project aid in India. By the 1970s, there was widespread agreement in the aid community that the effectiveness of food and dairy aid could be multiplied if combined with technical expertise, and cash or loans when appropriate. Like outmoded programme aid, project aid also can mitigate macroeconomic government fiscal and balance-of-payments problems (e.g. from currency devaluations, World Bank-mandated SAPs, or price rises in oil or other necessary imports) by displacing commercial imports, while allowing more investment in domestic development.[44]

This describes precisely the rationale for Operation Flood. After partial success was achieved in the Green Revolution, the Indian government and EEC donors turned to the challenge of the White Revolution. Dairy aid was to fund streamlined infrastructure

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[42] Shaw & Clay (1993) *World Food Aid*: pp 2, 61-68.
[43] Table from Shaw & Clay (1993): p 62. Drawn from Agrostat FAO Rome, the same database used for maps and charts in this thesis.
[44] Shaw & Clay (1993): pp 61-62.

that would integrate rural producers with urban consumers, to their mutual benefit. Let us now synopsise the three ambitious phases of Operation Flood, drawing from many sources.

OF-I (1970-81): a top-down milk grid over India

This thesis sees the first phase of OF as the "top-down" construction of a national milk grid over the Indian sub-continent. The selection of four geographically disparate metropolitan nodes, in a roughly diamond-shaped grid, established forward- and backward-linkages between the 18 chief rural dairy regions and the four biggest metropolitan centres of Bombay, Calcutta, Delhi and Madras. P.J. Akins writes that the grid:

> ensures the balancing of supply and demand across the boundaries of metropolitan milksheds by transferring milk from areas of surplus to areas of deficit.[45]

John Empson says OF-I began with SMP and BO from the WFP.[46] But, Doornbos *et al* trace OF-I origins directly back to the EEC, explaining that OF-I was proposed by the National Dairy Development Board (NDDB) of India in 1968, when it realised that (quoting an FAO report by M. Halse):

> 20,000 tonnes of table butter were to be presented (by the EEC) free to India...enough to wreck the Anand pattern cooperatives' market plan for some years to come. [47]

As described, this may have been a dramatic instance of indigenous managers taking control of forthcoming dairy aid in order to minimise disincentives to their own farmers, along with destruction of their organisational goals. It was probably crucial to its success that the NDDB (founded in 1965; Dr. Verghese Kurien became chair[48]) and Indian Dairy Commission enjoyed strong patronage from the Government of India

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[45] P.J. Akins (1989) "Operation Flood: dairy development in India" in *Geography*: pp 259-262.

[46] John Empson (September 25, 1993) "India joins the dairy big leagues" *Hoard's Dairyman*: p 692. Empson's account correlates with Doornbos', as WFP dairy aid also had been utilised in India before OF-I was proposed.

[47] Martin Doornbos *et al* (1990a) *Dairy Aid and Development*: pp 77, 77-89. Doornbos cites a 1977 FAO report by M. Halse: p 51.

[48] M.V. Kamath (1989) *Management Kurien Style*: p 177. After inaugurating Anand's new cattle feed compound plant in 1964, PM Shastri promoted the Anand model in India's Fourth Plan. Before Dr. Kurien become chair of the NDDB, he won GOI agreement that NDDB headquarters be located in Anand instead of Delhi and that he continue to be paid by the farmer-owned coops - not GOI. Kamath's profile of Kurien is that of an ambitious manager who revolutionised Indian dairying - even though he knew nothing about cows before leaving the steel industry to study dairying at university in Michigan, USA. (N.B.: The IDC was founded in 1970 and later merged with the NDDB.)

(GOI) - which had favoured the Amul/Anand model since the visit there by PM Shastri in 1964. That helps explain why in 1969, according to Doornbos *et al*, the GOI accepted the NDDB's proposal of OF-I for reasons including: (1) balance-of-payments advantages when the dairy aid displaced commercial imports; (2) OF made it possible "to increase the meagre dairy development budget several fold and to give a big push for dairy development"; and (3) the GOI favoured replication in India of Anand-type coops, and thus Anand control of these EEC commodities dovetailed with official policy.

There were other reasons why the GOI wished to spur dairy development. Not least of these was hygiene. Moving cattle from city barns to rural areas would simplify waste disposal and contribute to the rural fuel supply and crops fertilisation, while eradicating one source of urban sanitation problems. It was not to be so easy.

OF-I was approved by the WFP in 1969. It was initially approved for five years, but "delays in the expansion of existing dairies, followed by the world crisis in dairy commodities which severely curtailed WFP's shipments to the projects"[49], as well as laggard shipments by the EEC, slowed implementation. A more positive reason to extend OF-I was probably a growing realisation by the NDDB of the multiple purposes to which EEC dairy aid could be put. In any event, OF-I was extended till 1981.

Problems & summary of OF-I:

Doornbos *et al* (as well as Shanti George, 1985) point to a "bias" to Gujarat (which already enjoyed "extensive cooperative infrastructure" in five of its districts before OF-I formally began). Of a total of Rs 1248 million OF-I funds disbursed, Gujarat absorbed 30% of OF-I funds - about five-times that alloted to less developed Bihar and Rajasthan.

However, slowdowns in the implementation of OF-I due to a possible bias toward Gujarat, were supplemented by failings of a more prosaic, political nature. MV Kamath, a defender of OF and its director Dr. Kurien, cites long-standing corruption at Patna in Bihar (which was to supply metropolitan Calcutta to the Southeast), which

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[49] Doornbos *et al* (1990a) *Dairy Aid and Development*: pp 82-83. Citing UN/FAO/WFP (Sept. 1981) *Terminal Evaluation Report on Project India 618* - "Milk Marketing and Dairy Development": p 17.

suggests that project authorities prudently held purse strings tight, when it came to Bihar.[50]

Doornbos *et al* cite a 1978 GOI report blaming: (1) underestimates of the "manpower, time and money needed" to help producers set up Anand-style coops - as well as political delays by state governments such as Karnataka and Kerala[51] resistant to the Anand model; (2) the new coops modelled on Anand were left "in the hands of local bureaucrats, while putting the responsibility for their performance on the project authority" - interests that did not, unfortunately, always coincide; (3) underestimates of the "capability" and political will of public dairy corporations to properly run their dairies.[52] Except at Delhi, the dairies were built without due regard for the complex, transnational requirements of the national milk grid. Additionally, some dairy managers (e.g. in Bihar) remunerated indigenous farmers too little for their milk, depressing output, and then substituted too much imported SMP and BO, further depressing indigenous prices - a cardinal sin of dairy aid misuse that was corrected after a rebuke in the 1984 Jha Committee Report.

The organisational competence of the NDDB and OF project authorities like Dr. Kurien was bitterly questioned by critics including Claude Alvarez[53] and Shanti George. Doornbos *et al* note that, although the NDDB Annual Report 1980-81 claimed 10,423 Anand pattern societies had been formed during OF-I, nearly half of these (connected to districts in Kaira, Baroda, Mehsana, Sabarkantha and Banaskantha) were actually formed *before* OF-I began.[54] Apparently, claims of early membership were inflated.

In hindsight, it is easy to criticise bureaucrats, politicians and plant managers for slow implementation of OF-I. But their performance seems no worse than the sporadic

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[50] M.V. Kamath (1989) *Management Kurien-Style*: pp 290-296.
[51] M.V. Kamath (1989): p 287, 310. Kamath, a staunch defender of Dr. Kurien's management of OF, writes that, ironically, Kerala is Kurien's home state, "But the milk revolution there has yet to come." Concerning Karnataka (formerly Mysore), Kamath adds that it had no tradition of coops, but when its state dairy was subsumed under OF, it eventually prospered. Also, a recent PhD thesis by a faculty member at a university in Karnataka noted that the state had initiated its own dairy plans before OF-I, and was therefore resistant to the Anand model.
[52] Martin Doornbos *et al* (1990) *Dairy Aid and Development*: p 83. They cite a 1978 GOI report.
[53] Claude Alvarez (October 30, 1983) "The White Lie" in *Illustrated Weekly of India*.
Cited by M.V. Kamath (1989: pp 337-340) who notes that a parliamentary row ensued.
[54] Martin Doornbos *et al* (1990a): p 85.

performance of rich countries, and the WFP, in deliveries of promised commodities in decades beset by civil war, drought, and compared to today, less working knowledge of exactly which policies are best to address pressing problems such as milk shortages.

Other disappointments plagued OF-I. The plan to transfer city-kept cattle to the country was according to Doorbos *et al*, "a virtual non-starter". This was probably due to transport problems and a reluctance of urban farmers to move, which was eventually overcome when prices were raised for rural producers. Idealistic plans to extend milk programmes to pre-school children in 20 cities were launched in less than 10 cities and, embarrassingly, continued only in Delhi and Calcutta.[55]

The large urban processing plants that OF officials termed "Mother Dairies" in the four large metropolitan centres of Bombay, Calcutta, Delhi and Madras, have been castigated by Shanti George as white elephants of wasteful, inappropriate technology. Doornbos *et al* agree, insofar as the capacity of dairies in four metropolitan towns tripled from 100,000 to 300,000 litres per day during OF-I, but that their throughput too often was lower than optimal. Nevertheless, despite their identification of anomalies and failures in the design and implementation of Operation Flood, Doornbos *et al* do not seem to quibble with the need for capital investments in a national milk grid, *per se*.

However, the under-utilised capacity contributed to increased dependence of urban dairies on imported SMP and BO for recombined milk. Dairy aid was estimated to comprise 22% of throughput around 1970, but Doornbos, van Stuijvenberg & Terhal claimed that dependence on dairy aid rose to ca. 36% in 1981-82.[56] P.J. Atkins responded that their figure was misleading in the light of later data, which showed that dairy aid represented just 17.7% of throughput between 1982/83 and 1983/84, and that it was predicted to fall to 3% around 1990.[57] Nevertheless, some of the figures on processing throughput available in the mid-1980s appeared to be harbingers of permanent Indian dependence on EEC dairy aid. The astounding *amounts* diverted

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[55] Doornbos *et al* (1990a) *Dairy Aid and Development*: p 84.
[56] Doornbos, van Stuijvenberg & Terhal (August, 1987) ""Operation Flood: impacts and issues" in *Food Policy*, Vol 12, No 4: pp 376-383.
[57] P.J. Atkins (August, 1988) "Rejoinder: India's dairy development and Operation Flood" *Food Policy*: pp 306, 305-312.

from the EEC's milk powder and butter mountains (ca. 127,000 MT of SMP and ca. 36,000 MT of BO) during OF-I (1970-81) also seemed to echo portents of India's new thraldom to Europe. On the other hand, according to M. Jul, supporters argued that:

> making milk available cheaply to urban consumers, Operation Flood has made milk consumption feasible for those who do not belong to the highest income groups....Some also claim that the price of milk has fallen relative to the price of most other food items and hence, milk is more accessible to lower income groups..[58]

But, besides the supply and sanitation improvements welcomed by middle-class, and perhaps poorer urban consumers, other statistics reflected organisational progress in OF that, supporters argued, stabilised milk flows to urban markets, where a gradually rising demand could result in more income security for rural farmers located on the supply grid feeding those cities. Doornbos *et al* acknowledge that rural farmers probably did get gains from the improved supply system, and note:

> indigenous procurement of milk rose from 70,000 litres per day (lpd) in 1970 to 150,000 lpd in 1981-82.[59]

If the urban processors could ever decrease their reliance on imported dairy aid, the entire OF development plan might start to look worthwhile to its many critics.

OF-II (1978-87): consolidation; a membership drive; democracy?

Needless to say, NDDB/OF authorities sought to tighten up accountability in OF-II, recommending that coop cluster federations (rather than local bureaucrats in public or state dairy corporations) become the implementing agencies at state level, and that some dairy aid be allocated to local feeder-balancing dairies that were tied to local towns. It may be that, by these reforms, OF-II brought stronger elements of democracy and direct farmer participation into Operation Flood - even though project authorities probably employed Delhi-based political clout to consolidate national pre-eminence of the IDC/NDDB/OF nexus.

This consolidation of control undoubtedly helped spur completion of the national milk grid. It is also likely that, in Gujarat and the Western region, and possibly in other favoured areas, logistical efficiencies resulted in gains for rural farmers as well as urban

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[58] M. Jul (May, 1979) "Unexpected benefits from a dairy project", *Food Nutrition Bulletin*, 1(3): pp 15-19). Cited in H. Alderman (1987) *Dairy Development in India*.

consumers, and (more in dispute) rural consumers. It seems likely that increased farmer participation in decision making precluded some of the disincentives wrought during OF-I, when short-sighted processors employed too much dairy aid in a vicious circle, begun when the processors had set farmgate prices to low. But OF critics were difficult to please. Raymond Crotty complained that:

> the sale of reconstituted EEC milk enables the Indian dairy Corporation to pay a higher price than it would otherwise for milk in the village.[60]

According to Alderman *et al*, Crotty was at least "more consistent than [Shanti] George's view that Operation Flood does not raise real producer prices yet it induces producers to increase the supply of milk to the market."[61]

Critics were not placated by announced reforms in OF-II. They saw most of them as subterfuges to further consolidate OF control of what was becoming the Third World's largest, most expensive dairy development scheme. Doornbos *et al* say:

> Compared to OF-I, OF-II was planned as a much more ambitious undertaking.[62]

The initial ambitious proposal for the first years (1979-85, not 1987, confusingly) of OF-II, a US$200 million credit from the International Development Agency (IDA) was trimmed by the World Bank to US$150m. The Bank also trimmed projections of dairy aid to be donated by the EEC. The original budget outlay was to be Rs 4855 million, with 36% derived from a World Bank loan (via IDA), 15% from repayments of OF-I loans, and the largest portion, 49% to come from sales of recombined SMP and BO.

Doornbos notes a "striking" difference between initial "projections" and "the real resource flows" that OF authorities eventually controlled. Doornbos *et al* identify two reasons for this: (1) EEC dairy commodities were sold at *higher* prices than originally

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[59] Martin Doornbos *et al* (1990a) *Dairy Aid and Development*: p 84.
[60] R. Crotty (April 2, 1983) "Operation Flood and the EEC" in *Economic & Political Weekly*: p 522.
[61] Harold Alderman *et al* (1987) *Dairy Development in India*: p 82. They cite Shanti George (1983) "Cooperatives and Indian Dairy Policy: More Anand than Pattern" in *Cooperatives and Rural Development* by D.W. Attwood and B.S.Baviskar (eds.), Delhi, OUP.
[62] Doornbos *et al* (1990a): pp 90, 78, 89-95.

planned; and (2) EEC dairy aid was expanded beyond expectations through "large *ad hoc* gifts."[63]

Originally, 186 thousand MT of SMP and 76 thousand MT of BO were planned for OF-II (ca. 50% larger than during OF-I). But *ad hoc* EEC gifts amounted to an additional 41 thousand MT of SMP and over six thousand MT of butter from EEC storage, in OF-II (ca. 1978-87). This dairy avalanche totalled OF-II dairy aid of ca. 227 thousand MT of SMP and ca. 82 thousand MT of BO and butter - about 80% more milk powder and roughly twice the butter commodities received by OF-I.

Whereas most OF-I commodities were received only by the four biggest metropolitan dairies (and a few feeder balancing plants), additional ad hoc EEC donations, in OF-II, made possible the channelling (from buffer stocks) of commodities to many rural dairies which, heretofore had received none. Critics charged that too much went to the state of Gujarat, and particularly, as much as 8% of SMP to the original Amul coop. The Indian minister of agriculture denied such favouritism, claiming that :

> Amul received about 3.8% of SMP and 4.6% of BO donated under OF-I, and about 2.6% of SMP and 1.6% of BO donated under OF-II (till 31st March 1983)

However, even if Amul received only its fair share of commodities, in the same passage Doornbos *et al* point to evidence of financial favouritism to Amul in both OF-I and OF-II: out of a total estimated value of capital assets of Rs 130.7 million in 1983, the Amul coop accounted for Rs 31 million in grants and 53.4 million in assets. Amul was origin of the Anand model, and seat of OF project authorities like Dr. Kurien, who were frequently attacked in the popular press.

OF-II also sought to spread the Anand model geographically by enrolling 10 million more farmer families, and establishing feeder balancing dairies to increase milk supply to 147 cities with populations over 100 thousand, according to Doornbos *et al.*[64] About the second phase of Operation Flood, P.J. Atkins says:

> In summary this was the diffusion and mass adoption phase of the 'package' offered by OF.[65]

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[63] Doornbos *et al* (1990a) *Dairy Aid and Development*: pp 89, 128-133.
[64] Doornbos *et al* (1990a): p 97
[65] P.J. Atkins (1989) *Geography*: p 260.

To support this extension of Anand style coops around the country, OF managers also put in motion one of their most controversial initiatives. Their plan to improve input services included an artificial insemination (AI) scheme, and the establishment of a National Milch Herd of 10-15 million animals, in order to double India dairy production by the end of 1980s. OF-II planning was more explicit than that of OF-I and, perhaps in an attempt to mitigate fears that European pure-breds would totally replace indigenous buffaloes[66], plans called for the 7-10 million cross-bred cows in the National Milch Herd to be supplemented by "improved buffaloes" for the rest. Integrating buffaloes into the supply system for the National Milk Grid System was not more than just recognition of their qualities as a breed.

According to M.V. Kamath it was made possible by a far-reaching decision made by Dr. Kurien about 1953. Over UNICEF's recommendation of Dutch-made Volme powder-making plant (which scorched buffalo milk), Kurien insisted on a Danish-made Niro Atomizer, which became the first plant in the world to manufacture SMP from high-fat buffalo milk. Kurien's insistence on the buffalo-friendly system is a significant sace of a recipient rejecting inappropriate technological aid, and insisting on technology appropriate to indigenous production, thus lessening Indian dependence on surplus from European cows.[67]

OF-II also planned feeding plants to supply more concentrate nutrients for the higher-producing cattle. More input services, i.e. extension work with farmers, other training, and research on cattle breeding, feed and health (e.g. foot and mouth disease, FMD,

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[66] S. Baviskar & P.Terhal (1990) "Internal Constraints and External Dependence" in M. Doornbos & K.N.Nair (eds.), *Resources, Institutions and Strategies: Operation Flood and Indian Dairying*. Baviskar & Terhal cite All India Livestock Census reports for evidence that a 1965-75 trend toward buffaloes was followed by a striking "upswing of cow milk production" from 1975-80. John Empson (1993) noted that 45% of Indian milk is consumed as liquid; the rest is made into ghee, sweets. For non-liquid milk, high-fat buffalo milk is superior to cow milk. Therefore, today's predominence of buffaloes in the nationa sales herd seems logical.

[67] M.V. Kamath (1989) *Management Kurien Style*: pp 96, 100-102. Kamath claims OF developed SMP from buffalo milk against the advice of a powder expert from New Zealand, whose country would lose sales if OF succeeded. Dr. Kurien said, "Then only I realised how the advice of Technical Experts is coloured by the economic interests of their respective countries." OF also forged ahead, first in manufacturing condensed milk after a Nestle's official said it was too delicate to be made by "natives" (p 119), and then baby food from buffalo milk against the advice of Glaxo (p 120). Thence, success in baby

which critics claimed European strains were prone to) were to be funded also. Meanwhile (responding to a paradigm shift among development practitioners in favour of "basic needs" and of integrating rural sectors into national economies) some claims were made on behalf of OF's ability to reduce poverty in remote areas, even though Doornbos *et al* concede that:

> The plans for Operation Flood II and III do not mention this urgent priority.[68]

Another topic in the debate over OF was milk consumption in rural villages, where critics claimed women and children were sacrificing milk consumption when the lactic cash crop was taken away to middle class, urban consumers.[69] OF was conceived to be "neutral" regarding the welfare of so-called vulnerable groups, and an entire sub-topic of research and literature developed on these questions. Martin Doornbos and Manoshi Mitra question the effect of the flow of milk from the countryside on women and vulnerable groups.[70], but acknowledge that payment for milk could be transformed into larger amounts of protein in the form of legumes, pulses or other substitutes. Writing from a later vantage point, Miriam Sharma and Urmila Vanjani used the phrase "nutritional apartheid" for situations where:

> neither the rural areas in general, nor women specifically, are likely to benefit from increased milk production in terms of consumption.[71]

Although the phenomenon of nutritional apartheid may be exaggerated, Sharma & Vanjani are on firmer ground criticising "internal colonialism" in OF that they claim reinforces negative stereotypes in Indian gender relations. According to Sharma & Vanjani:

> ...the modern dairy system represented by the male-controlled processing and marketing centres in the city depend upon the cheap labour-intensive work of females operating in the rural sector.[72]

Sharma & Vanjani's resentment of male hegemony over most of the new high-tech jobs offered by OF is understandable. Women's status was threatened wherever OF divested

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food was termed "doing a Nestlé on Glaxo", and Kurien said he had "beaten the multinationals at their own game". India reportedly ceased commercial imports of SMP in the late 1970s.

[68] Doornbos *et al* (1990a) *Dairy Aid and Development*: p 315.

[69] Martin Doornbos *et al* (1990a): p 91, 101-105.

[70] Martin Doornbos & Manoshi Mitra (November, 1985) "Politics of International Dairy Aid: International Interest and the White Revolution": p 27.

[71] Miriam Sharma & Urmila Vanjani (1993) "When More Means Less...in rural Rajasthan", in *Soc. Sci. Med*: pp 1377-1389.

village women of their traditional responsibility for processing milk into ghee - turning some skilled cottage processors into glorified cowherds, while their male counterparts learned the intricacies of vacuum pumps in gleaming dairy temples of stainless steel. Defenders of Operation Flood would respond that the programme was designed to be neutral in its effects on gender roles, etc.

Yet, OF officials would answer (quite rightly) that their primary responsibility was raising milk production and consumption - not social engineering for all contingencies. At any rate, the negative effects of shifting ghee manufacture from villages to local processors might have been exaggerated. As Shagufta found in her socio-economic study of ghee-making, generally, it is households of a higher socio-economic status, usually with more land that had enough surplus milk to make into ghee or khoa.[73] Such women might be able to turn profits from milk sold to coops into other remunerative activities with high status, perhaps by purchasing a sewing machine for cottage textile making.

Judged by so many competing criteria, would OF-II be seen as any more effective than OF-I? Although gift dairy imports accounted for only about 1% of Indian milk production[74], the physical quantities were nevertheless immense, and the fact that OF was the world's largest dairy development programme made it a magnet for critical study by the popular press and academia. Because concrete facts were difficult to obtain, pundits had relatively free rein to cast OF according to their ideological expectations. Doornbos *et al* say the "lack of adequate statistics" on some production and consumption trends makes it necessary to judge OF-II "indirectly." Assessing reports on OF-II by NDDB/OF, the Indian government, the EC Commission and the EC Court of Auditors, Doornbos *et al* found the latter report of the EC Auditors much more critical than the others. They inferred that stagnancy in net Indian dairy production and/or consumption lay behind "discontinuities" in statistics; Doornbos *et al* assessed "three main dimensions":

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[72] Sharma & Vanjani (1993): p 1387.
[73] Shagufta Jamal (1991) *Women in Dairy Development*: pp 132, 169, 183. Households of higher socio-economic status are more likely to hold more land producing fodder - a chief constraint on milk yield.
[74] *OF: A Progress Report* (March, 1988) NDDB: p 12.

> (1) Total number of milksheds covered, dairy cooperative societies established, total number of members of these societies, and total milk procurement.
> (2) Milk procurement at the village level and farmers' participation, regionally desegregated.
> (3) Coverage and quality of input services. [75]

Briefly, they found that (1) "was successful" but warned that "a word of caution" was necessary, because of "discontinuities" in (2) specifically, that dairy "programmes in Karnataka, Madhya Pradesh and Rajasthan" were included in OF-II's optimistic statistics, even though they were financed by the IDA on a different basis. Doornbos *et al* also noted that, while OF described its dismantling of existing dairy corporations (traditional fiefs of the states) "in terms of democratisation and farmer control", although its actions "had more to do" with incorporating them into the "centralised IDC/NDDB controlled structure" behind OF.

As for dimension (3) Doornbos *et al* concluded that the increase of input services for animal health, breeding and feeding (p 101) was below expectations, mostly because of slow disbursal of funds, and that regions outside Gujarat required expansion of inputs to increase performance.[76] They concluded that OF-II had:

> not caused a substantial intensification of milk production. The increase in procurement is basically due to the progressive extension of the catchment area rather than to any increased productivity per society or member.[77]

To employ a contemporary business metaphor, Operation Flood may have been acting to secure its future success by a Machiavellian seizure of market share - while it temporarily ignored bottom line profitability, or unit productivity.

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[75] N.B. Doornbos *et al* (1990) *Dairy Aid and Development*: pp 97-100. Their difficulty is shared by this thesis. However, the benefit of seven more years of statistical hindsight allow us to draw more comprehensive conclusions on India's dairy improvements from the 1960s to the 1990s.

[76] The Jha Committeee report (GOI 1984) called OF "By any standard...a successful programme", but recommended more grants to inputs services. This the NDDB rejected, claiming that earlier success in Amul proved an "assured market" and a "fair price" were sufficient incentives for coops to build infrastructure on a loan, not grant, basis. Doornbos *et al* were rightly sceptical that regions with poor soil, years behind Gujarat in dairying, could readily adopt the Anand pattern without help on input services.

The Report of the EC Court of Auditors (1988) criticised a benign 1986 report on OF-II by the EC Commission for relying too much on "over-optimistic Indian documents". The EC auditors said OF had "achieved on a very piecemeal basis" any significant increase in per capita milk consumption, advantages to rural or urban poor, supply to cities or extension of the Anand model.

[77] Doornbos *et al* (1990) *Dairy Aid and Development*: p 100.

The Jha Report calls for OF price reform

Although it judged OF "successful", the 1984 Jha Committee Report slapped the wrists of OF authorities for:

> lack of attention for production increase and input services, too low producer prices and over-investment in physical capital.[78]

It is the view of this thesis that compliance by OF and state authorities to the wishes evident in this mild-sounding rebuke of the Jha Committee were crucial to the long-term success of Operation Flood. This is because the artificially-low urban sales prices, and too-low producer prices noted above, were the most detrimental aspect of the early management of OF. Evidence of such counter-productive pricing was found by M. Lipton.[79] It is important to note that part of the problem, i.e. urban prices that were pleasingly-low to consumers but problematic for the budgets of urban processors, was often beyond the control of OF authorities, and had to be corrected by state authorities. According to P.J. Atkins the Jha Report considered that (artificially) low prices set by state politicians on urban milk sales and:

> [low] farmgate prices 'offend against the principle of social justice' and are counter-productive because they have a disincentive effect upon production.[80]

However, OF authorities could influence the relationship between urban processors and indigenous farmers, which they did. It is no exaggeration to say that if the price of EEC dairy commodity aid (set by NDDB/OF authorities for SMP and BO sold to the Mother Dairies, etc.) had not been properly raised *to make the procurement of milk from indigenous Indian farmers economically attractive*, dependence on dairy aid might have continued indefinitely. India's White Revolution would indeed have become what Claude Alvarez called a "White Lie." Fortunately, pricing policies *were* corrected in a manner that stimulated milk production, and national dairy autonomy.

Against the OF-II goal of doubling animal yield by the period 1978-86, Doornbos' assessment shows little progress. Perhaps the targets were set too high - a laudable trait in practitioners, but an invitation to criticism by social researchers, as Doornbos *et al*

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[78] Jha Committee Report (1984 GOI), in Doornbos *et al* (1990) *Dairy Aid & Development*: pp 106-107.
[79] M. Lipton (1985) "Operation Flood and other EC aid to India" in M. Caliewaert, ed., *India and the EC*, Centre for European Studies, Brussels: pp 106-108.
[80] P.J. Atkins (August, 1988) "Rejoinder: India's dairy development and Operation Flood" in *Food Policy*: p 306.

acknowledge.[81] During the long-running furore over the export of oilseeds, etc. in the *Economic & Political Weekly* and other media in the 1980s, perhaps some OF personnel (or their supporters) responded with grandiose claims. But, (appropriate for a national dairy plan) OF authorities were not just increasing their control of machinery, property, membership lists and government budgets - they also were widening their control of the supply of the nation's *milk*. As P.J. Atkins notes:

> By late 1988...procurement was running at an annual average of 8 million litres per day. This represents a fifteen-fold increase in milk supply to OF since 1970.[82]

Although increases in procurement by OF-related cooperatives might mask dormancy in *net* national milk production, OF project authorities retained government support. Despite its missed targets of doubling production, and exaggerated claims on extending the Anand model, the government was still betting that (after a period of consolidation and steady infrastructure building) its investment in OF would pay off. Meanwhile, OF authorities released official reports showing improvements in dairy performance. The chart **(Table 18)** titled *India's positive trends coincide with the Operation Flood era*, compiled from Agrostat/FAO data available ca. 1994, shows there was much truth in optimistic reports: compared to Bangladesh and Pakistan, India's production and consumption of the (FAO-designated) dairy food groups "butter & ghee" and "milk excluding butter" increased remarkably after the beginning of OF-I in 1970.

But continued reliance on EEC powder and oil enflamed the OF debate. Indians had witnessed unmet expectations before, in industries such as steel, and in the Green Revolution. But what led critics (including some farmers, opposition politicians, religious zealots and nationalists of all stripes) to suspect irregular - even criminal - activities in Operation Flood was their perception of a "smoking gun" in the continuation of aid imports longer than expected. The outcry against OF grew, not just in India, but also in Europe - especially from the European Parliament, as well as from scholars centred in The Hague. Critics doubted the ability of Brussels to dissipate its milk lake and butter mountain - even after the imposition of EEC milk quotas in April 1984. They also doubted a consensus of political will by the EC to cut out dairy aid. Until 1974, surplus disposal was the main impetus for EEC dairy aid, but after that, it

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[81] Doornbos *et al* (1990) *Dairy Aid and Development*: p 313.
[82] P.J. Atkins (1989) *Geography*: p 260.

became a more formal instrument of foreign policy - just as (this thesis argues) food aid had always been used by the US. As Doornbos *et al* saw it:

> In sum, by giving support to Operation Flood-II the EEC could gain a lot.[83]

In general, OF was perfect to achieve these EEC goals: (1) the EC Commission could gain international prestige in the first World by (emulating the US role as a dispenser of cereals aid) utilising its dairy aid for development in India, (not to mention raising the status of the Commission among European national governments - no small consideration EEC leaders like Commissioner Jacques Delors); (2) success in OF would enhance the image of Europe to the Third World and serve as a model for other dairy projects; and (3) diverting embarrassing milk mountains to India would dampen criticism of the CAP in Europe. Doornbos also notes that for the limited personnel in the EEC's aid bureaucracy, administering huge quantities of dairy aid to one country (India, which had demonstrated its ability to process them) was far easier than dividing those quantities between several smaller aid requests. Another attraction of extending aid to India was that it was a leading non-ACP country, and the EEC had (until OF) received no kudos for ignoring non-ACP countries.

Practical considerations are seldom neglected by policy makers for long.[84] In the wake of the recessions induced by OPEC oil embargoes begun ca. 1973 and 1980, the non-oil producing countries of Europe anxiously sought potential markets for farm products, in order to maintain healthy farm sectors, as well as to ease national trade deficits. Additionally, the EC Commission and the Dutch Dairy Board[85] stated that building recombination milk plants in LDCs stimulated future commercial markets, and that stimulating LDC demand could solve the EC milk surplus. Such bald public statements were evidence for Shanti George's comparison of EC dairy aid to a "Trojan Horse" designed to lull India into dairy dependence.[86]

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[83] Doornbos *et al* (1990) *Dairy Aid & Development*: pp 59, 60, 70-71.

[84] This thesis is unaware of any evidence that Great Britain supported OF purely out of loyalty to India, a fellow member in the Commonwealth, but the fact that OF-I began shortly before Britain's entry into the EEC in 1973 invites speculation.

[85] *Zuivelzicht* (1979) No.15: p 346; also *Produktschap voor Zuivel* (1984). Cited by Doornbos 1990a: pp 65-66.

[86] Shanti George (1985) *Operation Flood*.

Original plans made in 1978 expected OF-II to commence with a 15% use of imported commodities in urban dairies until mid-1982, after which the expected surge of indigenous production would allow imported dairy aid to shrink to 2% in 1985.[87] So when OF authorities applied to the WFP and the EC for even larger amounts of commodity and financial aid for OF-III, they were surrounded by a storm of accusation. According to Doornbos *et al*:

> The question which arises in this context is: how indispensable are these donations to sustain the programme? This question has become one of the focal points in the debate on Operation Flood ever since the proclaimed target to reach self-sufficiency was not reached by the end of 1985.[88]

OF III (1987-1994): more dairy aid; more debate; better performance?

Phase-III was quite simply an extension of OF-II, to accomplish unfulfilled goals of the programme, consolidate progress already made and, according to Atkins extend the cooperative sector:

> to 70,000 dairy societies, with 15 million milk animals. By 1994 it is hoped to cover 176 milksheds and to supply 13 million litres per day to about 450 towns and cities. [89]

John Empson says that with renewed emphasis on animal health and extension services, improving cross-breeds through AI, and raising cattle feed production to 11.9 billion pounds annually, OF-III was:

> spearheading the way towards the national target for the year 2000 of production of 172.0 billion pounds.[90]

Relatively recent, 1994 estimates from Agrostat FAO show Indian milk production in OF-III rose from 46.7 million MT in 1987, to 63.2 million MT in 1993. Thus the target alluded to by Empson for the year 2000 (172 billion pounds is about 78 million MT) may well be attainable. This is especially likely if existing cattle can be better fed, for it has been documented by innumerable observers, including Harold Alderman (1987 *Dairy Development in India* IFPRI for the World Bank), that feed is the single biggest

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[87] Doornbos *et al* (1990a) *Dairy Aid and Development*: p 97.
[88] Doornbos *et al* (1990a): p 110-111.
[89] P.J.Atkins (1989a) "Operation Flood: dairy development in India" in *Geography*: pp 260, 259-262. Out of 247m bovines, OF might then utilise 6%.
[90] John Empson (1993) "India joins the dairy big leagues" in *Hoard's Dairyman*: p 692.

factor in higher milk yield.[91] Of course, all the favourable figures **(Table 13)** presented here were not available to (or acknowledged by) pessimists at the beginning of OF-III in the late 1980s.

As noted before, there was an uproar of discontent when, upon failing to phase out EEC food aid in 1985, and failing to disburse large sums held in OF accounts towards rural dairy development, OF and EEC officials actually set about increasing the commodity and financial commitments in OF-III. Added to this was the revelation that the US (anxious to divest itself of surplus stocks resulting from price supports and a strong dollar) subsidised a massive sale of 56,510 tonnes of SMP to India in 1984. (Doornbos *et al* 1990: p 127) Pessimists believed the stage was set for permanent dependence upon EEC dairy aid.

In explaining the continued reliance of OF upon external dairy aid, Doornbos *et al* point to the fact that, behind the confusing claims made by special interests claiming orientation of this massive dairy development programme for the benefit of rural development, women and children, lower castes, tribals and others who conceivably could benefit from dairy development in India, the programme was not designed with such specific "bottom-up" goals in mind. Doornbos *et al* say:

> OF has been designed as a programme for structuring the Indian milk market in a specific way.[92]

Additionally, they say that as a major source of finance for the National Milk Grid System (NMGS) and physical food stocks, dairy aid provided by the WFP and the EEC:

> served to stabilise the NMGS. This is one of the reasons why the programme has been dependent on Community aid for such a long time.

Doornbos *et al* add that the bulk of funds in OF control were "directed towards building this marketing infrastructure."[93] **(See Figs. 26-28)** In brief, OF sought to improve national Indian dairy performance by increasing efficiencies in the linkages between

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172 billion pounds = ca. 78 billion kilograms = ca. 78 million metric tonnes. Agrostat/FAO shows Indian milk production rising from 46.7 million MT in 1987 to 63.2 million MT in 1993, a target of 78 million MT looks attainable around the year 2000.

[91] Harold Alderman *et al* (1987) Dairy Development in India, IFPRI, for the World Bank. See also Doornbos *et al* (1990a) Dairy Aid and Development: p 54.

[92] Doornbos *et al* (1990a): pp 124-125.

Table 13

India's positive trends coincide with the Operation Flood era				
MILK Total Prod'n Exp.Growth	BANGLADESH	INDIA	PAKISTAN	WORLD
ProdExGr 1961-93	1.8%	**4.1%**	3.1%	1.6%
ProdExGr 1961-71	1.5%	1.0%	2.3%	1.7%
ProdExGr 1972-93	1.9%	**5.2%**	3.9%	1.4%
ProdExGr 1980-91	3.4%	**5.4%**	5.4%	1.4%
MILKexBUTTER P'cap ConEx.Gr.	BANGLADESH	INDIA	PAKISTAN	WORLD
P'capConsumptn Exp'lGr 1961-92	0.4%	1.9%	0.1%	0.2%
ConsExGr 1961-71	-0.8% negative	-1.2% neg	-0.4% neg	-0.4% neg
ConsExGr 1972-92	0.6%	**3.1%**	0.7%	0.4%
ConsExGr 1980-91	1.8%	**3.4%**	1.7%	0.2%
BUTTER&GHEE Prod'n Exp'l Growth	BANGLADESH	INDIA	PAKISTAN	WORLD
ProdExGr 1961-93	1.2%	3.1%	3.2%	1.2%
ProdExGr 1961-71	1.8%	0.1% poor	2.2%	0.9%
ProdExGr 1972-93	0.6%	**4.2%**	4.2%	0.9%
ProdExGr 1980-91	-0.8% neg	**4.1%**	5.7%	0.7%
BUTTER & GHEE P'capita Conspt'n.	BANGLADESH	INDIA	PAKISTAN	WORLD
P'capConsumptnEx-p'l Growth 1961-92	-2.4% negative	0.7%	0.2%	-1.1% neg
ConsExGr 1961-71	-0.0% poor	-1.7% poor	-0.6% neg	-1.2% neg
ConsExGr 1972-92	-4.6% worse	1.9% better	0.7%	-1.1% neg
ConsExGr 1980-91	-8.1% worrying	**2.0%** good	2.0%	-1.1% neg
INCOME (Y) GNP per capita*	BANGLADES*	INDIA*	PAKISTA*	CHINA*/ lo-inc-ec's*
US Dollars in 1991	$220	$330	$400	China $370 LIE:s $350 *w*
1980-91 ave. annual growth rate*	1.9% per capita GNP	**3.2%**	3.2% US aid Afghan War?	China 7.8% LIEs:3.9%*w*
LITERACY in 1990	78% female 65% total	66% female 52% total	79% female 65% total	China 38%*f*, 27%*t*
POPULATION	BANGLADESH	INDIA	PAKISTAN	WORLD
PopExpGr 1961-93	2.7%	2.2%	2.9%	1.9%
PopExpGr 1961-71	2.7%	2.3%	2.8%	2.1%
PopExpGr 1972-93	2.7%	**2.1%**	3.1%	1.8%
PopExpGr 1980-91	2.5%	**2.1%**	3.3%	1.8 %
Source: Agrostat FAO, except * = *World Development Report 1993*				

Key abbreviations: *f*=females; *t*=total; *w*=weighted average; (1991 $US).

[93] Doornbos *et al* (1990a): p 125.

rural producers and urban markets. The gamble was that even though OF disbursals were often disappointing in the amounts given to input services for breeding, feeding and maintaining rural cattle, eventually the improved national infrastructure would begin to repay its investment. Then more attention could be paid to input services.

More discussion of the NMGS

Like other huge marketing initiatives, OF aimed at multiple demand-supply targets, all moving at different rates.[94] As predicted, the incentive of larger markets and fairer prices (after implementation of the Jha Committee admonishment on pricing) did stimulate greater supply from some milksheds. Meanwhile, demand among urban consumers rose (as many of them enjoyed higher incomes), making it difficult for the nascent national milk grid (NMGS) to balance supply with demand. (No wonder many processor managers had preferred meeting urban demand from available food aid, rather than negotiating price and supply with area farmers.)

It is worth noting once more that the GOI valued the balance-of-payments support that dairy aid offered. Furthermore (and perhaps the most important point) it was apparent to anyone who understood the tremendous transport problems of India, not just immense distances, but also formidable climatic problems posed by summer heat (for hygiene and preservation) and monsoons (which regularly washed out rural roads), that completion of the national milk grid was a crucial piece of infrastructure, which (more than AI or even cattle feeding programmes) could unify India's dairy industry and put it on the road to modernity.

Summary on Doornbos & colleagues

Although Doornbos *et al* are not quite so keen as OF officials (or this thesis) on the National Milk Grid System (NMGS) in particular and the programme as a whole, the reader is left with the impression of a barely suppressed conflict between their professional obligations as researchers, and some underlying enthusiasm for dairy development. Martin Doornbos *et al*, who at times have characterised OF as a failure, admit that the "position as social researcher" forces them to "criticise the practitioner

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[94] Doornbos *et al* (1990a) *Dairy Aid and Development: India's Operation Flood*: pp 97, 111-112.

for unrealistic planning, or for defective implementation."[95] Perhaps reluctantly, surmises the reader. Doornbos *et al* wind down their analysis of the use of EEC dairy aid in India thus:

> The present discussion as to why India has been dependent on EEC aid for such a long time cannot be extended beyond 1985 due to lack of exact information.[96]

While appreciative of the comprehensive study of OF done by Doornbos *et al*, we have examined more recent data that rejects many of the doubts entertained by Doornbos *et al* on OF, and supports OF officials' claims to improving India's dairy output and consumption. Further, this thesis has explained the significance of the building up of the NMGS, which already seems to be paying off in accelerated production rises. the early 1990s. Nevertheless, Doornbos *et al* sum up the ironies of Operation Flood very neatly:

> is it feasible that European dairy surplus can be donated to raise funds to stimulate milk production in India, while at the same time India sells commercial exports of oil seeds to feed Dutch and other European cows - even though oil seeds, a traditional ingredient of the Indian fodder mix, are not in surplus?
>
> From 1960 to 1979, dependence on EEC produced cattle grains declined, compared to tapioca and especially oil cake imported from India. From 169,000 tonnes of oil cake imported to the EEC in 1969, this amount had risen to 929,000 tonnes in 1982 - "an amount far more than necessary to produce the quantity of milk that could be derived from the recombination of EEC donated dairy commodities to India in that year (van Ree [1984])."[97]

Although an educated guess expects that imposition of the 1984 milk quotas dampened demand for imported inputs such as oil cake from India, it is easy to understand why observers were alarmed by such paradoxical trade flows prior to 1984 - particularly those who clove to development themes of "self-sufficiency" and "basic needs" that have been shown to be outdated, by the success of agricultural liberalisation in China, etc. Although this thesis argues than many such fears were misplaced, it is probable that thoughtful, analytical critiques such as that of Doornbos and his colleagues from IDPAD[98] hastened the end of massive shipments of EU dairy product aid to India. Such perceptive observers are invaluable for ensuring that public initiatives such as Operation Flood do not go awry.

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[95] Doornbos *et al* (1990) *Dairy Aid and Development*: pp 313-314. They deplore the extent to which discussion of OF has focused on the replicability of the Anand model to farmers outside Gujarat.
[96] Doornbos *et al* (1990): p 135.
[97] Doornbos *et al* (1990): pp preface, 13, 54-55.
[98] The Indo-Dutch Programme on Alternatives in Development (IDPAD) had these stages: 1981-83, 1984-89 and 1990-93.

Conclusions on Shanti George's benchmark critique of OF

In the first, and one of the most important book-length critiques of Operation Flood (which aroused much tabloid "yellow journalism" focused on the strong personalities connected to OF), Shanti George chose to focus on the suitability of OF *policy* decisions in the context of India. Her analysis, a benchmark in the opposition to OF, amounted *in toto* to a blistering attack on OF as a Westernised "Trojan Horse" of great danger to Indian agriculture, social culture and agri-economic self-sufficiency. George entertains all of the doubts aired by Doornbos *et al* - and more. At times George's attack on OF is overweening in its intensity - even at times contradictory - so zealous is she (despite self-professed intentions to concentrate on *policies* rather than *personalities* (e.g. Dr. Verghese Kurien) in her deconstruction of the programme.

In retrospect, George's 1985 book may perhaps be forgiven, for what this thesis believes is its over-pessimistic assessment of OF. This is because (1) at the time it was written, statistics showing aggregate improvements in India's dairy performance were unavailable or in dispute and; (2) EEC dairy aid to OF was increasing in 1985, when dairy aid was scheduled to be phased out. Some suspicion of continued aid flows was understandable. There was corollary evidence to suggest that India might be seduced by dairy aid; writing two years before George's book, Anne M. Thomson noted:

> ...attempts to increase food prices significantly have, in the past few years, led to riots. Cheap bread is now regarded as a basic human right in Egypt.[99]

Just as cereals aid had made priced Egyptian wheat farmers out of the domestic market, and made the Egyptian government dependent on food aid (and perhaps vulnerable to donor-influence on policy), Shanti George feared that EEC dairy aid would similarly harm India's dairy self-sufficiency, and subject Delhi to foreign policy blackmail. This thesis agrees that the OF saga very well could have turned out this badly, but due to firm control of EEC dairy aid taken by OF, the final picture is much more optimistic.

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[99] Anne M. Thomson (August 1983) "Egypt: Food security and food aid" in *Food Policy*: pp 178-186, 182. Thomson notes Egypt has much food security with food aid. But she also notes that Cairo is now bound into a cheap food policy dependent on it. This thesis also notes that US PL 480 shipments ceased after the "6-Day War" of 1967, and increased before and after the 1979 Egypt-Israel peace agreement. It is likely that Egypt's status as "one of the largest recipients of cereal food aid" from the US influenced its foreign policy.

Taken as a whole, George's book expresses her view that (1) OF should not have invited use of EEC dairy aid, and (2) certainly not insisted on textbook replication of the Anand model in all parts of India. George wrote:

> A study of the literature on India's agricultural economy, on rural India and on Indian dairy policy has convinced me that present trends should be reversed if we are to benefit from a dairy policy that recognises the authentic roots and nature of India's dairy problems.... Such a policy would endeavour to build on what already exists, rather than to tear down indigenous structures to be replaced with imports of dubious relevance.[100]

This thesis concedes that George was probably right to reject (2) wholesale replication of the Anand model (displacing previous workable structures). But as to point (1) on use of EEC dairy aid, we have already seen evidence (from Doornbos *et al* 1990, and other sources) of the implicit threat that EEC dairy aid posed to India's dairy autonomy, and that, most likely, the wisest policy response India could make to the EEC offer of aid was to utilise the aid for the long-term augmentation of India's dairy autonomy.

George's book is nevertheless helpful in pointing out shortcomings in some of the extravagant claims made for OF. As B.S.Baviskar pointed out, when institutions like the IMF and World bank were swept by fervour for "integrated rural development", OF "cashed in" by suggesting that benefits could accrue to the rural poor from extension of the NMGS.[101] Such claims were specious, since OF was primarily designed to stabilise the national milk marketing system, and dingenuous when not met. In response to such embarrassments, OF director Dr. Kurien could only reiterate that the primary goal of OF was to stabilise milk flow throughout the country.

When George defends the petty dairy marketeer (cast as a villain by OF planners seeking to remove this middleman, who too often was responsible for price-gouging from rural producers and adulterating the milk supply) the reader wonders if George's defence is not just an automatic negative response to every facet of the OF programme.[102] George can certainly find instances where these colourful petty marketeers fulfil valuable functions in the community, such as in giving credit to

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[100] George (1985) *Operation Flood*: pp xi-xii.

[101] B.S.Baviskar (July 2, 1983) *Economic & Political Weekly*: p 219. Baviskar also edited a volume containing work by Shanti George.

housewives. However, the gains to the community from increased efficiencies from the NMGS (not to mention release of the petty traders to more productive labour) probably outweighs the utility of petty milk marketeers.

Gender, minority & poverty-alleviation effects of OF

Some of Shanti George's other criticisms of OF are more illuminating. She disputes claims by some OF advocates, and by researchers Somjee & Somjee (1978)[103], that "Anand... is a powerful weapon against caste" when "Brahmans mingle with Harijans" in milk queues. George says:

> Unfortunately there is more to life in rural India than standing in these queues. We are informed that such mingling has not weakened caste barriers in other arenas of interaction... and that the mingling itself is largely symbolic. [104]

George also charges that the Patidar caste, which dominates dairying in Anand and the state of Gujarat, extends solidarity to equivalent groups in Tamil Nadu and Maharashtra, perhaps not always to the advantage of other groups. She may well be correct. But in defence of OF, it should come as no surprise that caste barriers which have grown over centuries have not been totally eradicated in the brief OF era. (Although "mingling" in milk queues is conceivable a step toward social integration). More importantly, it bears repeating that OF was *not* designed as a cure-all for India's social ills, but as a structural reorganisation of national milk markets.[105]

Some idealists were due for disappointment. In a study in South Gujarat, relatively close to OF headquarters at Anand, Franco & Chand found that while there seemed to be no general bias against tribals entering dairying, "a final reckoning" as to the question of whether "OF is in itself a beneficial development for the tribals?" was "in the negative." This was because of the preoccupation of "OF on processing and marketing", making OF more oblivious even to the need for extension work on feeding

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[102] Shanti George (1985) *Operation Flood*: pp 209-227. George's Chapter 10 is titled "A man nobody wants but everybody needs: the petty dairy marketeer".
[103] A.H. Somjee & G. Somjee (1978) "Cooperative Dairying and the Profiles of Social Change in India" in Economic Development and Cultural Change, (26:3): pp 577-97.
[104] George (1985) *Operation Flood*: pp 170-171. George cites S. Sambrani (1980) *Transforming the Rural Poor: The Big Push in Action (The Experience of Operation Flood)* Institute of Rural Management, Anand.
[105] Doornbos *et al* (1990a): p 124.

and breeding of cattle, etc., than optimal.[106] Failure of OF to disburse funds for such extension activities was the object of scrutiny by GOI and the EC, but little corruption was revealed, and some examiners inferred that rivalry between state governments and Anand was behind some delays in extension services to farmers.

If tribals in the vicinity of Anand received little attention from OF policy, it is unlikely that minorities in states far from Gujarat received much either. In fact much of the dairy progress (and investment) made in OF was in the western state of Gujarat. John Empson notes that:

> Regionally, production varies considerably. The main production area is the northern region, with about 45% of the total, centred on Delhi; followed by the western and central regions (21%) based on Bombay; and the southern region (21%) based on Madras.[107]

Like any large business enterprise, OF sought to build the profitability of its home base, and avoided over-extending beyond its capabilities. Like other infrastructure, such as paved roads, OF processing plants, storage facilities for pooled buffer stocks, or insulated road and rail milk tankers[108] OF Phase III did not *directly* benefit many of India's citizens. However, it seems eminently reasonable that, if this infrastucture investment in the NMGS raised dairy output, in tandem with expanding markets in the cities, more social groups (e.g. women, tribals, rural small-holders) could gradually come to benefit therefrom.

Some studies (e.g. Sharma & Vanjani 1993) question the benefit of OF, when cross-bred cows, bought on loans through OF programmes, add to the already onerous workload of women and children responsible for feeding and milking the animals. But Shanti George is on firmer ground when she questions the gender role implications of modern OF technology. George points out that in the past women made ghee at home, and controlled the income from its sale. Although the lost income for ghee might be made up by income received from exchange in the village milk queues, OF

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[106] F. Franco, Fand P.G. Vijaya Sherry Chand (1991) *OF and the Voluntary Sector*: p 225.
[107] John Empson 1993 "India Joins the dairy Big Leagues" in *Hoard's Dairyman*: p 692.
[108] *OF Phase III* (1985) NDDB. This 60+ page proposal states that expanded infrastructure in the "Project will enable the State Cooperative Federations/unions to build up the basic and supporting infrastructures required to procure, process and market some 18.3 millions litres of milk per day." In comparison, John Empson (*Hoard's* 1993) predicted that by the year 2000, OF processing would double to "68.4 million pounds a day."

modernisations resulted in a net loss of women's status when only men were employed in the new high-tech infrastructure.[109] In feminist terms, OF unwittingly may have skewed dairy development toward male dominance - a critique that has been made against much of the mechanisation of agriculture over the last century.[110]

Nowadays (a quarter century after OF began) development practitioners are more aware that some plans are less "gender-neutral" than others. They try to avoid the sort of "internal colonialism" in gender roles, that Sharma & Vanjani identified in OF.[111] For example, a UK-based NGO called Riders for Health, working with the cooperation of WHO and the British ODA, trains women as over 70% of its motorcycle riders, for the health ministries of Lesotho, Ghana and Zimbabwe.[112] This is done not just because women constitute the bulk of nurse-practitioners riding to remote villages, but also so that women as well as men (who comprise most of the mechanics in the "zero-breakdowns" programme) benefit from the knowledge and status that come with the introduction of new technology. Likewise, Shanti George is probably right to call for more "gender-neutral" policies in Operation Flood; at any rate, it is likely that as the rural economy prospers, women will have more employment opportunities in the mechanised dairy system.

Echoing Susan George warnings of IC cooptation of LDC farming; Shanti George and Ben Fine would call, say Zeneca or Ciba-Geigy's supply of Green and White Revolution inputs "appropriationism" - of dubious benefit to the farmers in the field. This thesis recognises the dangers inherent in the modernisation of India's agriculture, but also recognises the potential benefits. For example, it is possible that the extension of irrigation (where appropriate) in crops production could result in generally cheaper fodder for dairy production in India.

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[109] Shanti George 1985 *Operation Flood*: pp 196-197. George cites N. Singh, D. Jain & M. Chand 1979 "Milkmaids of Kaira District: Some Notes", Institute of Social Studies, New Delhi.

[110] Personal comment. I would disagree. Although some urban dwellers joked about "stout Olga, the tractor driver in the USSR", it is a fact of the US family farm that women and girls share mechanical chores. This enhances their social status - and financial power in their roles as consumers in town.

[111] Sharma & Vanjani (1993).

[112] *Reaching Out* (1996) Published by Riders for Health (RFH), Norton, Daventry, Northamptonshire NN11 5ND UK. Established in the late-1980s, RFH often cooperates with Save the Children Fund (SCF) in health-delivery projects in Africa. RFH funding comes from motorcycle race events in the UK and EU.

Final discussion of breeding & feeding

On some grounds, Shanti George has been proved absolutely correct in her criticism of OF. Such is the case in regard to cattle breeding. She is backed up by Clay and Stokke (1991) who claim:

> The considerable research and extension effort to increase milk yields through cross-bred animals has been a failure.[113]

However, in the long-term that statement may prove extreme, since sources including John Empson see some success in crossing European breeds with Zebu cattle in India. And as India develops its fodder base, including oilseeds, cross-breds may play a more productive role in Indian dairying. Prospects are good. John W. Mellor has long been optimistic about the ability of India to meet the demand of higher-yield dairying for more fodder:

> There is every indication that India's agricultural and marketing systems could respond to ...an increase in demand.[114]

Mellor's assertion, made in the 1970s, is coming true in the 1990s: in what K.N. Ninan calls "a dramatic turnaround", India's oilseeds production has been rising at 6% a year, comfortably ahead of demand rising at 4% a year.[115] Back in a 1989 review of Ninan's book of that year titled *Oilseeds: Is Higher Price the Answer?*, Ashok Gulati noted that the NDDB had been given a GOI assignment to "restructure the edible oil economy on the 'Anand pattern'..."[116] There are signs that the assignment was carried out, again (as in the case of OF) with a reliance upon realistic pricing policy, not just technology. A recent article by Janairus Banaji details how the post-Gulf War liberalisation of India's economy is bringing in billions of rupees of investment by MNCs into the oilseeds industry. For instance, ITC, (an affiliate of BAT) which is diversifying from tobacco into food production is setting up one of India's largest plants for processing of rape seed and mustard at Alwar in Rajasthan. Other plants owned by firms like Glaxo,

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[113] Edward Clay and Olav Stokke (1991) "Food Aid: The State of the Art" in their edited book *Food Aid Reconsidered: Assessing the Impact on Third World Countries*: p 15.

[114] John W. Mellor (1976) *The New Economics of Growth*: p 48. Humans and animals alike eat oilseeds.

[115] K.N. Ninan (1995) "Oilseeds Development and Policy: A Review" in *Economic and Political Weekly*, India, March 25: pp A14 - A27.

[116] Ashok Gulati (1989) "Oilseeds: Is Higher price the Answer?" in *E & PW*, September 2-9: pp 2007-2008. Review of K.N. Ninan (1989) *Edible Oilseeds: Growth, Area Responses and Prospects in India*.

Nestlé and Zeneca are also making large investments in Indian agriculture that could help increase the supply of fodder and concentrated feed inputs for dairying.[117]

However, Clay and Stokke buttress George's basic assertion that Holstein-Friesian breeds from temperate Europe could not replace cows and buffaloes that are resistant India's indigenous diseases, pests and climatic extremes. George was also fundamentally right in pointing out misconceptions held by European technical advisors, as to the actual role of Indian dairy cows, which is primarily as breeders of bullocks for traction power, and only secondarily for milk production. V. M. Rao points out that, while the annual milk yield of cows in the US and northern Europe produced over twenty-times more milk than the cows (157 kg.), and over seven times more milk than the buffaloes (504 kg.) in India:

> about two-thirds of the power requirements of Indian villages are met by 80 million work animals.[118]

Furthermore, as George notes, although Indian cows are poor milk producers compared to the vaunted Friesians of the North, their upkeep (fed on traditional crop wastes) is minimal, and their manure is efficiently, and ecologically used for crop growing. In time Western dairy advisors agreed with George and other critics that, for milk production:

(1) purebred European cows were unsuitable for India;

(2) Indo-Euro half breeds might be suitable in some regions;

(3) but indigenous buffaloes may be best for India.

John Empson notes that in 1990, "just over half" (55% or 63.9 billion pounds) of milk is now produced by buffaloes, and 45% (52.9 billion pounds) by cows.[119] Recognition of the superior disease-resistance of indigenous buffaloes to inappropriate European pure-breds, was a significant reversal of, shortsighted policies. It is evidence that OF officials were amenable to sensible criticism (from village farmers, as well as Shanti George) and eventually adapted their dairy development model to real world conditions.

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[117] Janairus Banaji (October, 1996/January, 1997) "Globalisation and Restructuring in the Indian Food Industry" in *Journal of Peasant Studies*: pp 191-210.

[118] V. M. Rao (1991) *Dairy Farming: : Socio-economic Analysis of Milk Production*: pp 1-3. Rao (whose book is based on Ph.D. research in Andhra Pradesh) draws from Vinod & Achaya (1980), Nair & Vidyanadhan (1978), and Singh, et al (1970).

[119] John Empson (September 25, 1993) "India joins the dairy big leagues" in *Hoard's Dairyman*: p 692.

Additionally, a mix of cows and buffaloes, which P.J. Atkins notes "have different seasonal yield patterns"[120] could help stabilise seasonal milk supply in India.

Prognoses for OF

Increasingly, reports on dairy development in India are optimistic, in terms of fodder production, milk production and milk consumption. It will be at least the year 2000 before present optimistic trends are fully assured. Much, of course depends upon climate. An increase in global warming - or even return of drought as severe as that of 1987-88[121], would retard Indian dairy production, but likely not stop it in its tracks, for we have already seen improvements in the food distribution responses by Delhi, in concert with other governments, to address such emergencies. As India's economy continues to improve, urban demand is likely to support maintenance and the extension to more remote areas of the National Milk Grid System, and will likely raise the incomes of an increasing number of rural producers and infrastructure.

Operation Flood met John Mellor's Rx for food aid

A concern of this thesis has been the inter-relationship between dairy product trade - and aid. Sceptics of EEC dairy aid in India warned that food aid can lead to dependence, such as the "wheat trap" of Nigeria's indigenous cereals market decried by Andræ & Beckmann. So was Operation Flood the "Trojan Horse" set to erode India's dairy independence that Shanti George warned about?

This thesis has asserted that where food aid has been unsuccessful (or counter-productive), one or more of the conditions John W. Mellor outlined for successful programmes were violated. Mellor advocated food aid but cautioned, "three demands must be met by the food donor and two by the food aid recipient."[122] Let us now compare the list of Mellor's demands to performance in Operation Flood:

- Donor must (1) "provide *reliable* amounts":

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[120] P.J. Atkins (1989) "The Geographical Structure of Operation Flood": p 5. Atkins writes that, "This species asymmetry has implications for plant capacity, as does the extraordinary difference between lean and flush season procurement." It follows that the right cattle mix could reduce processing costs.

[121] *OF: A Progress Report* (1988) NDDB: p 12. This report dates the drought as 1988, rather than 1987 given by other accounts.

[122] John W. Mellor (1987) in Clay & Shaw *Poverty, Development and Food*: pp 187-88.

The EEC passed this test with flying colours, by maintaining shipments of milk powder and butter oil to India, even when opponents in the European Parliament, and a measure of public opinion, made it politically uncomfortable to do so.[123]

- Donor must (2) "provide *large* amounts" raising the net supplies of food in the recipient country:

By all accounts, dairy aid to Operation Flood was on a massive scale, more than meeting Mellor's demand that aid must boost the *net* assets in a recipient country.

- Donor must (3) "recognise the conditions of effective food aid", meaning that effectiveness of food aid can be magnified by linked aid in cash and/or technical assistance:

Donors' technical assistance was occasionally counter-productive. Some early technical assistance to India from rich countries was at best unrealistic (e.g. advising Holstein-Friesians for hot India), and at worst deceptive (e.g. foreign countries and MNCs reportedly tried to dissuade India from making powder from buffalo milk, or from manufacturing its own baby food, back in the 1950s). As for cash - the World Bank's International Development Association (IDA) and other international lenders augmented EEC dairy product aid with large loans on concessionary terms.[124] Along with urban sales of recombined milk, these loans financed the National Milk Grid System linking Bombay (now Mumbai), Calcutta, Delhi, and Madras - helping to stabilise India's milk supply, and building urban markets for increased shipments from rural areas.

- Recipient must (1) "give priority to agricultural development... to minimise the disincentive effects of food aid":

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[123] *Debates of the European Parliament* No 2-360/325 (January 22, 1988): pp 325, 320-325. In explaining a vote in favour of accepting Mr. Telkämper's December 12, 1987 Report on EEC-India cooperation with particular reference to Operation Flood (Doc. A 2-247/87), a member (Habsburg (PPE)) of the Committee on Development and Cooperation said: "I will vote in favour of the report, but I feel very uneasy about doing so. I know something about India. We are always helping India, but public opinion is constantly stirred against us. So if we do help India I would ask that the Commission's first concern be to make it known that the Community has guaranteed that aid, so that Community aid is not used time and again to set public opinion against us."

[124] *Official Journal of the European Communities*, No.C31, February (1988) "Court of Auditors of the European Communities, Special Report No.6/87 on Food Aid Supplied to India between 1978-1985 (Operation Flood II)": p 2.

Here is where India's dairy leadership excelled. As detailed in Chapter 3 above, Doornbos *et al* noted that in the late 1960s the NDDB preempted a possible threat to national dairy autonomy, by winning GOI approval of a programme to sell an imminent flow of dairy aid from the EEC in a manner that would fund infrastructure, rather than be a disincentive to indigenous farmers. M.V. Kamath presents persuasive hearsay evidence of this threat to make India dependent on European milk surpluses. Although this thesis is unaware of any "smoking gun", establishing a rich country conspiracy to subvert Indian dairy self-sufficiency, it is a fact (see Chapter 3) that some EEC leaders pondered the possibility that EEC dairy surpluses could flow to India *ad infinitum.* Thus, it was prudent of Indian dairy planners to construct the National Milk Grid System, so that the economic effects of drought in one region (or a surfeit of dairy product aid in another) could be stabilised over a wider geographical space.

- Recipient must (2) "pursue policies that spread capital supplies as *evenly* as possible over the labour force":

In this respect, OF disappointed some observers. Claims made in the late 1980s, that OF could benefit marginal and landless farmers (even widows) hurt OF credibility - despite disclaimers by Dr. Verghese Kurien and other OF officials that dairy development - not rural development *per se* - was OF's mission. Reporting on OF-II and prospects for OF-III, Telkämper told the European Parliament that:

> The infrastructures introduced under Operation Flood will primarily benefit medium-sized and large agricultural holdings.[125]

Mellor's demand that recipients "pursue policies that spread capital supplies as *evenly* as possible over the labour force" is technically met if it is true that OF benefited as many of India's rural poor *as possible.* Meanwhile, although Mellor's demands upon donors and recipients were generally met, rural poverty remains widespread. Some critics claimed a bottom-up approach, emphasising inputs to individual farmers, would have increased Indian milk production faster. However, as Wilfried Telkämper told the EC Parliament:

> The new dairy infrastructures require a capital investment which this programme aims to provide. The capital needed for breeding cattle and fodder cannot be raised by landless peasants and small landholders.[126]

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[125] Wilfried Telkämper (1988) *Debates of the European Parliament* No 2-360/325 January 22: p 321.
[126] Wilfried Telkämper (1988): p 321.

The EC Court of Auditors found that by the mid-1980s, EEC dairy aid had helped ease milk rationing - "solvent demand", i.e. demand for milk "by persons who can afford to pay" was met - one of the original goals of supplying dairy aid. They noted:

> The truth is that, due to the agronomical, climatic and demographic conditions of India, it was - and is - not possible for milk to be anything but expensive.[127]

But more of India's citizens could gain future benefits by investments in processing and marketing facilities, made possible by continued sales of EEC donations. The EC Court of Auditors (p 14) concluded:

> It is only because Community aid provided [Operation] Flood...with a considerable amount of finance for the implementation of its investment programme, that the Indian authorities have recently expressed the desire for this aid to continue.[128]

As the maps and charts showed in Chapter 3, consumption and production gains have been made since the advent of OF in 1970. Future gains will likely come to rely increasingly on the infrastructure that was financed by dairy aid. Gradually, more and more rural farmers will share in the commercial benefits of dairy development in India.

The Summing Up of Chapter 4

As population growth ebbed, and the dairy markets of rich countries matured in the 1970s, EEC dairy aid flooded into an India was beset by milk rationing due to insufficient supply for urban demand. The empirical evidence shows that in the 1970-1990 era, from OF-I through OF-III, Indian per capita consumption of milk (ex. butter) and butter & ghee increased significantly, compared to other poor countries like Bangladesh. It is difficult to ascribe the precise reasons for India's relative dairy success (interrelated as it is with India's status as "an emerging economy"), but it seems likely that Operation Flood was a prime force in its ascent toward status as the world's

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[127] *Official Journal of the European Communities*, No.C31, February (1988) "Court of Auditors of the European Communities, Special Report No.6/87 on Food Aid Supplied to India between 1978-1985 (Operation Flood II)": p 14. In light of this meeting of effective demand, it is understandable that OF began switching surplus Indian milk production into "luxury" products like sweets and baby food. OF's detractors were right to deplore continued nutritional deficits among India's poor, but often overlooked the long-term food security to be gained by improvements to dairy infrastructure.

[128] *Official Journal of the European Communities*, No.C31, February (1988) "Court of Auditors of the European Communities, Special Report No.6/87 on Food Aid Supplied to India between 1978-1985 (Operation Flood II)": also p 14. Finance toward India's dairy investment also testifies to EEC and WFP compliance with Mellor's third demand on donors - that donors should supplement food aid with cash, when appropriate.

leading dairy producer. It is doubtful that India's present dairy situation would be as auspicious, had OF not been initiated.

Mistakes have been made and learned from. It is difficult to be sure if there ever was a real danger that dairy aid could trap India into lactic dependence upon affluent countries. India's dairy leaders deserve credit for resolute determination, and prescient decisions, in enhancing the country's ability to produce, process and distribute milk in response to the demands of lean and flush seasons, as well as climatic changes from year to year. In a 1988 report OF officials claimed:

> Commercial imports of dairy products ceased in 1976 except for limited imports of milk powder to overcome the severe drought of 1988. The gift imports account for less than 1% of India's milk production. In addition all the dairy products now available in India are of Indian manufacture, without the use of any imported milk powder.[129]

The exact dates that all dairy aid to India ceased are in dispute. According to Agrostat/FAO/1994, there was a marked decrease in SMP donations to India as the effects of the 1987-88 drought were mitigated. Donations from the EEC were down even more than from North America. However, from a low of 1740 MT of milk powder in 1990, and 3005 MT in 1991, SMP donations from the EEC to India shot up to 13,110 MT in 1992 - the most recent year recorded by Agrostat. (EEC SMP donations accounted for nearly 100% of SMP received by India in 1992, with only 30 MT recorded from the Netherlands alone. (Indeed, WFP donations of milk powder to India ceased after 1977, according to Agrostat/FAO/1994.[130]) Generally, donations from other sources such as the US, the EEC, Finland and Switzerland have dwindled, except for unusual circumstances such as after the Gulf War of 1991 **(see Fig. 14)**.

Rather than an indication of dairy dependence, 1992 powder donations from the EEC were probably a temporary aberration, in a temporary utilisation by the Indian government (adjusting the structure of its economy, due to an acute balance of payments crisis induced by oil price rises in the Gulf War) of monetised food aid. Corollary evidence for this view is that 1992 saw more than a doubling (compared to 1991) of "non-cereals" food aid accepted by India, probably in order to help alleviate the budget crisis, rather than because of shortages of indigenous dairy products.

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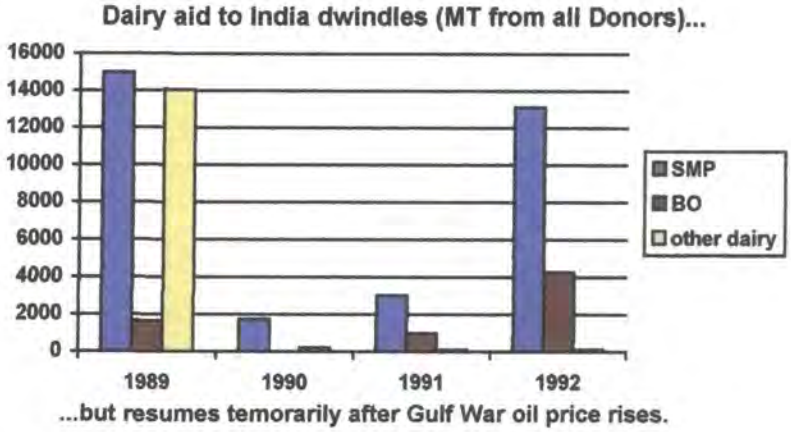
[129] *OF: A Progress Report* (March, 1988) NDDB: p 12.
[130] Agrostat/FAO/1994/Food Aid I/By Recipient/India.

Table/Figure 14

	1989	1990	1991	1992
SMP	15,000	1740	3005	13,140
BO	1655	0	1000	4253
other dairy	14,048	196	94	110



Overall, it now appeared evident that years like 1984, when India accepted *nearly 70 thousand MT of milk powder* from all donors (including nearly 50 thousand MT from the EEC - which only then was imposing milk quotas in order to flatten its milk mountains) were far behind. Agrostat data show that donations of butter oil from the EEC decreased in a pattern very similar to that of milk powder. Donations of "other dairy products" also fell similarly, distinguished only by a few hundred tonnes of products from Switzerland. Certainly the credibility of OF rose as EEC dairy aid ebbed, and virtually stopped in the early-1990s. Perhaps the critics of Operation Flood deserve some credit for ensuring that India weaned itself, in good time, from surrogate milk.

Replication of the Operation Flood model?

Could other countries replicate the "OF model"? I believe the answer is a *qualified yes.* But fostering proper price structures within developing countries is generally a more direct path toward economic progress than importing dairy aid. Even where dairy aid could be utilised (either to increase food security, or to alleviate structural adjustment), the liberalisation of world agriculture under the GATT-1994 agreement (which reduces rich country subsidies to dairy farmers and outlaws export subsidies), means, realistically, that stocks available for donation are falling. Milk lakes and butter mountains are diminishing. There is historic precedent for this: when US dairy policy changed in the mid-1970s, dairy aid previously available under PL 480 dried up. Now,

rich country stocks of milk powder and butter oil will fall, just as cereals stocks available for cereals aid have fallen in response to reforms mandated by GATT-1994. Secondly, the overall failure of OF planners to replicate the original "Anand model" in other areas of India, outside its home state of Gujarat[131], admonishes us that flexibility and sensitivity to indigenous conditions are crucial to development. Furthermore, it must be said that dairy aid can be corrupted - a sad fact that led to cessation of dairy aid to Afghanistan, and for a time threatened the reputation of OF in India, due to isolated cases of illegal sales. Monetised dairy product aid can, as we have seen, relieve recipient government debt payment burdens. But the threat is ever present that "aid" can be counter-productive, if it is used merely as a tool of bureaucratic empire building.

More optimistically, the evidence presented in this thesis suggests that *as long as proper pricing policies are followed*, sales of donated dairy aid can (when combined with other appropriate aid, cash or technical support) help fund infrastructure that benefits recipient country farmers and consumers. But early problems in OF (before pricing policy was changed, to make Indian production competitive with EEC dairy aid in processing for recombined milk sales) underlined the principle that food aid does *not* aid development when it prices indigenous farmers out of the market.

Operation Flood taught Northern dairists that their prescriptions, in breeding and feeding, were not automatically suitable for the South. But the economic lessons of OF transcend geographical boundaries. Put plainly: get the prices right or risk market failure. Don't stand in the way of indigenous farmers to supply consumers. Fortunately, the facts that milk production in India has tripled (see Agrostat data in Fig. 11) since 1970, and that per capita consumption has risen, are evidence that Operation Flood, which played such a leading role in India's White Revolution, eventually got its prices right. On balance, it is a legacy to be proud of. It could have been much worse.

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[131] Doornbos *et al* (1990a) *Dairy Aid and Development* : p 135. According to Doornbos, after decades of Operation Flood: (1) Gujarat still dominates milk procurement and product manufacturing; the difference in liquid milk consumption between West and the North and South is less pronounced than in fresh procurement or in manufacturing; (2) the North and South market a relatively larger portion of their fresh milk in liquid form; (3) more than half of (dry stuff equivalent) of milk procured is utilised for the manufacturing (66% in Gujarat) of products, e.g. baby food.

CHAPTER 5: CONCLUSIONS ON DAIRY AID & TRADE

Introduction

In response to India's "milk famines" of the 1960s, the government of India and organisations such as the World Food Programme established Operation Flood, which for a quarter century (1970-96) was the world's greatest stage for the interplay of dairy aid and dairy trade. OF outperformed the predictions of critics who called it a Trojan Horse, even if it did not meet every social goal of its protagonists. India has been weaned from EU (*aka* EEC, EC) dairy aid in the 1990s, and continues development into the WTO era of liberalised, commercial trade. Preceding chapters ended with conclusions on their individual contents, but it is useful to reflect on this thesis *in toto*. Before final remarks, ideas for further study may highlight what has been shown already.

Suggestions for further research

Thanks to the Agrostat/FAO/1990/1994 databases this thesis has presented empirical evidence of dramatic improvements in India's aggregate dairy performance. But Indian dairying remains a trove of information on more topics than could be covered here. Additional topics include: agricultural questions on which fodder mixes are suitable for cattle in the various climatic regions of India; sociological questions on gender roles in dairying; microeconomic questions of when and where farms of certain sizes are viable (i.e. economies of scale); and to what extent dairying stimulates ancillary commercial activities and economic prosperity, reflected in lower infant mortality, higher literacy and other quality-of-life indicators. Geographic knowledge gained in India might be applied to dairy development in Africa and vice-versa. Certainly, research such as Shanti George initiated on the Dairy Development Programme in Zimbabwe should continue, with results compared periodically to work in Asia and other continents.

Maps and data in the thesis text and Appendix (Figs. 14-25) could be the basis of more elaborate statistical analysis on production and consumption. Weighting Pacific Rim countries once indifferent to drinking milk (e.g. Japan, South Korea) according to their degree of "lactose-indifference" in 1950, and comparing them to consumption (of ice

cream, pizza cheese, fluid milk) in 1990 could reveal correlations between dairy aid, concessionary sales, marketing, advertising and cultural acceptance of milk products. Insights on health and nutrition could be gained by comparing consumption rates with disease (e.g. heart disease, osteoporosis) and morbidity. Political scientists may find documents elucidating decisions on OF in Europe and India, and resistance to OF's "Anand Pattern" cooperative in states like Karnataka which had previously established dairy development programmes.

Chapters and Conclusions

Chapter 1 traced the evolution of trade theory from the dire "zero-sum" international competition of mercantilism, to the present day consensus on free trade and Ricardo's theory of comparative advantage, expressed in the GATT/WTO-1994 agreement.

Chapter 2 noted the post-WW-II origins of food aid, epitomised by the United States' PL 480. Various development paradigms were noted, from Walt Rostow's "stages of growth", through "integrated rural development" to 1990s' calls by the World Bank and IMF for free markets and "good governance". Susan George, John Cathie and others warned that aid in general and "tied aid" in particular can be corrupted by commercial interests, and that food aid was sometimes co-opted as a geopolitical tool in the Cold War. Aid protagonists hit their apogee in the Club of Rome demand that rich countries contribute 0.7% of output to poor country development. But the anti-aid camps, long led in virtual exile by iconoclast Peter Bauer on the Right, and recently vocalised by the post-modern critique of Arturo Escobar on the Left, have agreed on some facets of failure in earlier "modernist" aid paradigms. P.J. Atkins[1] calls this consensus "a postmodern renunciatiation of top-down Western corporatist bureaucracy in favour of bottom-up development based on consultation" with farmers and other supposed beneficiaries of development. Regarding Operation Flood, my thesis agrees with critics that plans to cross-breed Indian cows and buffaloes with European breeds were flawed. Myopic also was Delhi's top-down plan to replicate the Anand coop (successful in Gujarat years before OF began) in areas geographically unlike its origin. However, to the extent that OF met the prescriptions of John Mellor and Hans Singer for food aid it met success: OF posed no net disincentive to Indian farmers, and investment in the National

Milk Grid System increased productivity. OF stands in bright contrast to aid programmes in Nigeria, described in Andræ & Beckman's 1985 book *The Wheat Trap*.

Chapter 3 moves from theory and argument to an examination of the empirical evidence on Operation Flood using Agrostat/FAO data expressed in charts, maps and tables. These data, released about 1994, are the core of this thesis because they refute earlier pessimistic evaluations of India's aggregate dairy performance. Perhaps Shanti George was marginally less brutal than Claude Alvarez, who in 1983 called India's White Revolution a "White Lie", but George's 1985 book *Operation Flood* gave the quintessential warning of possible disaster:

> It is in the context of food aid as trap that India has been warned to look EEC gift horses long and hard in the mouth, as they may well turn out to be Trojan horses...EEC donations, accepted with cries of gratitude and euphoria, can destroy India's already precarious dairy economy from within and render it forever dependent on imports.[2]

Indeed, commercial interests in Europe lobbied for export of dairy aid to India *ad infinitum*.[3] The danger that OF was an enticement to neo-colonial dependence was widely recognised. Martin Doornbos and researchers at The Hague called OF a failure[4] in which EEC dairy aid was a third of throughput in OF processing plants. But, P.J. Atkins rejoined that OF performance was better than its critics said[5] - a conclusion buttressed in my thesis by more recent data than was available to these critics. It is worth stating that a review of the often pessimistic literature on Operation Flood was insufficient to convince me of the merits of OF. But Agrostat reveals a striking reversal of India's dairy decline of the 1960s. As comparable countries suffered declines, Indian per capita intake of butter & ghee rose 20% from 1.0 kg. in 1961 to 1.2 kg. in 1992; per capita intake of milk-excluding-butter rose 40% from 38.7 kg. in 1961 to 54.1 kg. in 1989.[6] These rises look even better against India's "milk famines" of the mid-1960s.

Chapter 4 relates how, despite mistakes, Operation Flood strengthened Indian dairy autonomy. P.J. Atkins showed that claims by Doornbos, van Stuijvenberg & Terhal that dependence on dairy aid rose to ca. 36% in 1981-82 were misleading, in light of data

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[1] Personal communication with P.J. Atkins. The lesson is "Horses for courses", and farmers often know the course better than development planners. Marshall Plan strategies did not always transfer to India.

[2] Shanti George (1985) *Operation Flood*: p 249. George cites Kroese *et al* (1979) on "Trojan horses".

[3] Dutch Milk Bureau, etc.

[4] Doornbos, van Stuijvenberg & Terhal (Nov. 1987) "OF: impacts and issues", *Food Policy*: pp 376-383.

[5] P.J. Atkins (Aug.1988) "Rejoinder: India's dairy development and OF", *Food Policy*: pp 305-312

[6] See Maps/Figs. 14, 16, 18 (butter & ghee) and 20, 22 and 24 (milk ex. butter), etc.

showing that aid represented just 17.7% of throughput between 1982/83 and 1983/84, and that it was predicted to fall to 3% around 1990. Agrostat shows that despite a small rise (in 1992 dairy aid, to just a fraction of the peak in 1984, in order to ease budget crises caused by oil price rises in the Gulf War) in the downward trajectory of dairy aid, India continues on the path of dairy self-sufficiency. Operation Flood began two decades before the world-wide dismantling of centrally-planned-economies and the trend toward free market policies. But 10 months before the fall of the Berlin Wall, WFP policy analyst Bruce Crawshaw warned of the danger of ignoring market signals, at an international seminar in Anand, India, where Operation Flood began:

> Experience with WFP-assisted dairy development projects has clearly shown that without sound pricing and import policies, dairy development is fraught with problems. An import policy preventing plants from obtaining cheap imported or donated dairy commodities, together with a pricing policy that includes incentive prices and economic consumer prices, are major requirements for successful dairy development. [7]

The 1984 *Jha Report* had identified deleterious pricing that allowed EEC dairy aid to price Indian farmers out of the market. Without subsequent correction, OF would have deserved the scorn of its critics. Fortunately, realistic pricing helped ensure success.

Epilogue

After independence in 1947, India combined democratic institutions with the USSR model of top-down industrial development. Democracy has persisted, but India is now discarding "import substitution" and other aspects of "Nehruvian socialism"[8], while opening itself to international trade under GATT/WTO-1994 rules. P.R. Gupta says:

> India's dairy scenario has undergone a sea-change since 1992. So has Operation Flood on which the curtains have come down last year.[9]

These sea-changes include openness to foreign direct investment, joint ventures and opportunities for MNCs to use India as a source of food exports. Such inroads by MNCs are being criticised by Verghese Kurien[10] who was fighting European MNCs over control of milk powder manufacture in India in the 1950s - years before he became director of OF. Whatever the outcome of Indian liberalisation of its dairy sector in the

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[7] Bruce Crawshaw (1989) "Pre-Requisites for the Use of Food Aid as an Instrument of Progress" in *Proceedings: International Seminar on Dairying as an Instrument for Progress: the Indian Experience* (1990) NDDB: pp 184-194.

[8] Clive Crook (February 22, 1997) "A Survey of India: Time to Let Go" in *Economist*: p 3.

[9] Personal Email from P.R. Gupta, Editor, (Sept.16, 1997) *Dairy India 1997*. Internet website: http://www.infozech.com/dairyind

[10] Verghese Kurien (March 19, 1996) "MNCs Are No Good in Dairy Business," says NDDCorp. Chair. Dr. V. Kurien, inaugurating a cattle feed plant in Hassan. Website: http://www.indiaserver.com/news/bline

WTO era, it will surely be judged in terms of people's entitlements to dairy products and improvements to their quality of life. Few would quibble with Kurien's demand:

> Before we look to the future, we should acknowledge the contributions of those who have made possible today's self-sufficiency in milk production.[11]

Today, India remains relatively poor, but it is increasingly seen as an emerging economy. India's entry into the WTO era would surely be more fraught without the improved food security achieved in White Revolution efforts like Operation Flood.

Synopsising the main themes of this thesis

This thesis has illustrated the evolution of international dairy product aid and trade from WW-II to the end of the Cold War by focusing on India. India epitomises the efforts of developing countries to prosper in a world where rich countries dominate trade in not just high-value-added products such as jetliners and computers, but also basic commodities such as grain, milk powder and butter oil.

As well as noting the often overlooked symbiosis between farm and foreign policies of the EU in Operation Flood (similar to the US with PL 480), this thesis has sought to show, first how the long-time exemption of food trade from the GATT negotiations weakened the export strength of many Third World countries, and second how the liber-alisation of food trade in the GATT/WTO-1994 agreement *could* benefit poor countries in future. In analysis of a parade of post-WW-II development paradigms, this thesis has argued from a free trade stance, but also in favour of aid in present structural adjustment programmes when certain conditions are met - as they were in OF when appropriate technology and realistic pricing ensured dairy aid was not wasted, but its monetised proceeds invested in infrastructure such as the National Milk Grid System.

From the vantage point of the mid-1990s, Operation Flood appears to be a qualified success. It is one nexus where international dairy product trade flows, aid and development regimes - and the daily efforts of millions of dairists both within and without India - can be regarded with altogether more satisfaction than regret.

THE END

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[11] Verghese Kurien (1997) "Coming of the Second Miracle" in *Dairy India* yearbook.

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*

APPENDIX

Additional Charts, Maps & Illustrations

on following pages. See also Table of Contents.

N.B.: Map data for India, Bangladesh, Egypt, Pakistan, Turkey and Zimbabwe central to this thesis have been carefully checked for accuracy. Data for about 100 other countries were scrutinised less rigorously, but are included because readily identifiable patterns (e.g. a steep drop in butter consumption in rich countries) suggest additional studies.[1]

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[1] Midway through my research, the 1994 version of the Agrostat computer database superseded the 1990 version. Thus, any anomalies detected in Appendix maps may (if not simply my own errors) be due to inaccuracies in the 1990 version of Agrostat that were corrected by the FAO in the 1994 version. Future versions of Agrostat will yield yet more accurate data. Below are notes on Figs. 21, 23, 25:

- For Spain, updated Agrostat/1994 gives 1961 milk ex. butter consumption/intake at 80.7 kg. per capita in 1961, and 153.6kg in 1989, i.e. lower than the 156.9 kg. given in Agrostat/1990. And 1961-89 exponential growth in consumption is 2.5%, i.e. higher than the 1.1% given.
- For Portugal, Agrostat/1994 gives 1961 milk ex. butter consumption/intake at 64.5 kg. per capita in 1961 and 161.1 kg. in 1989, i.e. slightly higher than the 156.8 kg. given in Agrostat/1990. And 1961-89 exponential growth in consumption is 3.0%, i.e. lower than the 3.3% of the 1961-92 period, which includes the six year period of growth, following the 1986 admission of Portugal to the European Community (*aka* EEC, presently the EU), when consumption soared 54%.

Fig. 3

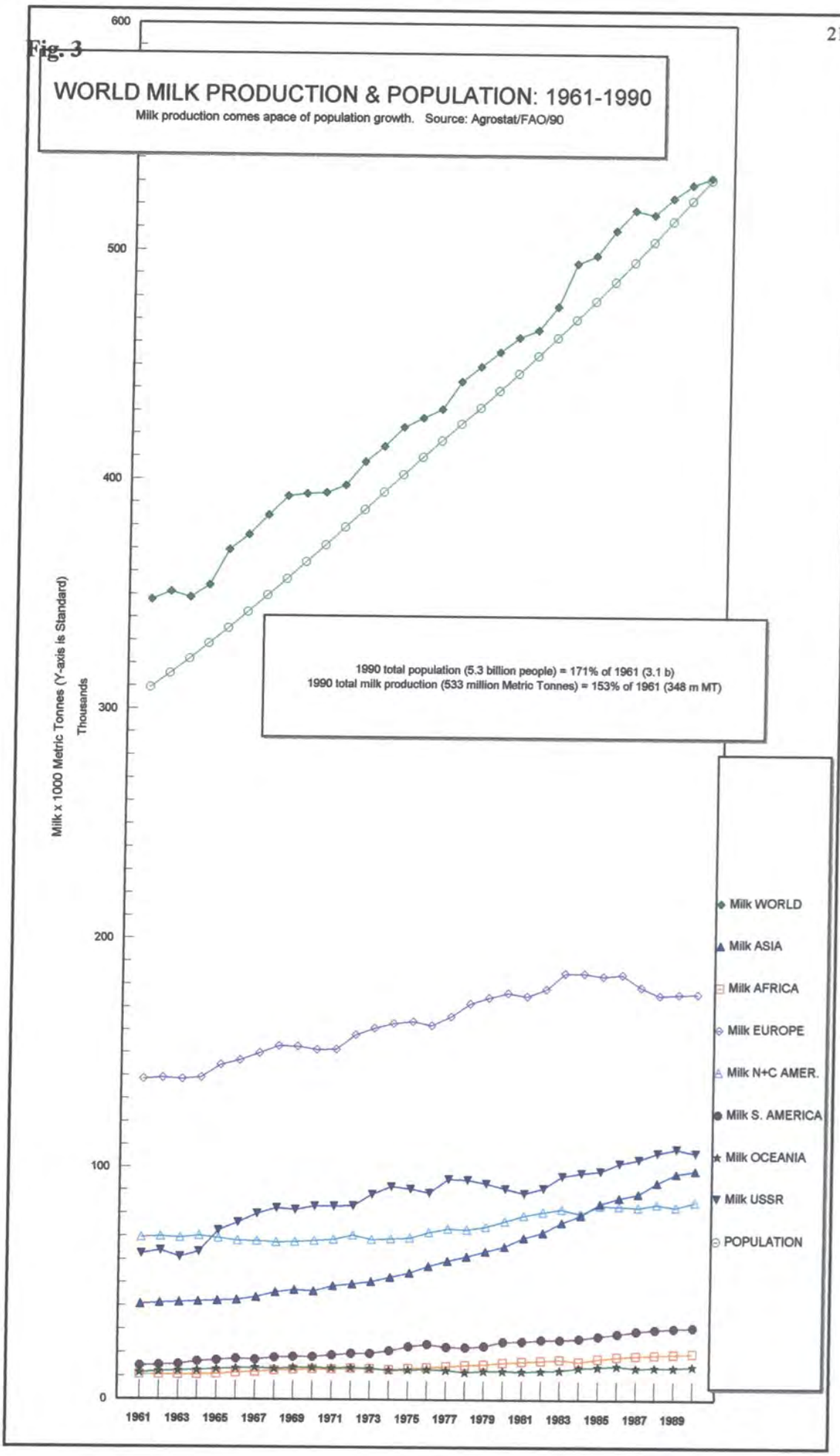
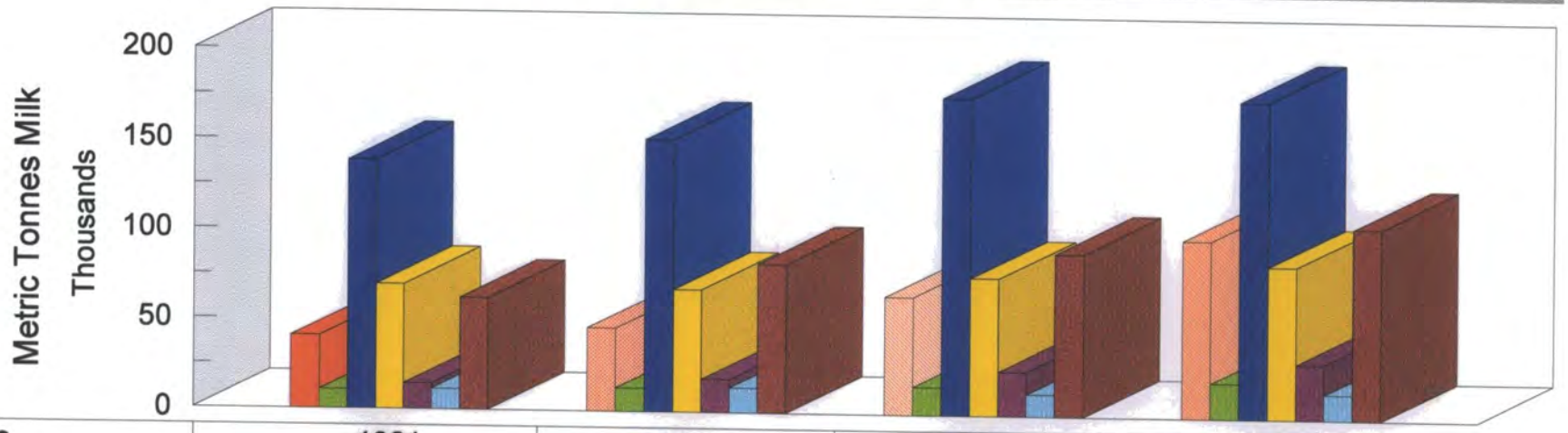

WORLD MILK PRODUCTION & POPULATION: 1961-1990
Milk production comes apace of population growth. Source: Agrostat/FAO/90
1990 total population (5.3 billion people) = 171% of 1961 (3.1 b)
1990 total milk production (533 million Metric Tonnes) = 153% of 1961 (348 m MT)
Milk x 1000 Metric Tonnes (Y-axis is Standard)
Thousands
600
500
400
300
200
100
0
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
Milk WORLD
Milk ASIA
Milk AFRICA
Milk EUROPE
Milk N+C AMER.
Milk S. AMERICA
Milk OCEANIA
Milk USSR
POPULATION

Fig. 7

CONTINENTS MILK PRODUCTION: 1961-70-80-90



X-Axis	1961	1970	1980	1990
ASIA	40624	46482	65695	99151
AFRICA	10545	12984	15709	19928
EUROPE	138541	151522	176416	176376
N&C AMERICA	69558	68253	76718	85144
S. AMERICA	14359	18433	24808	31004
OCEANIA	11521	13792	12314	14317
USSR/RUSSIA	62565	83000	90865	106703

Source: Agrostat/FAO/90 (Chart S~CM61.wk4) RATIOS of Milk Production (1990:1961): Asia (2.440:1), Africa (1.889:1), Europe (1.273:1), North & Central America (1.224 :1), South America (2.159 :1), Oceania (1.242:1), USSR (1.705:1)

Fig. 12

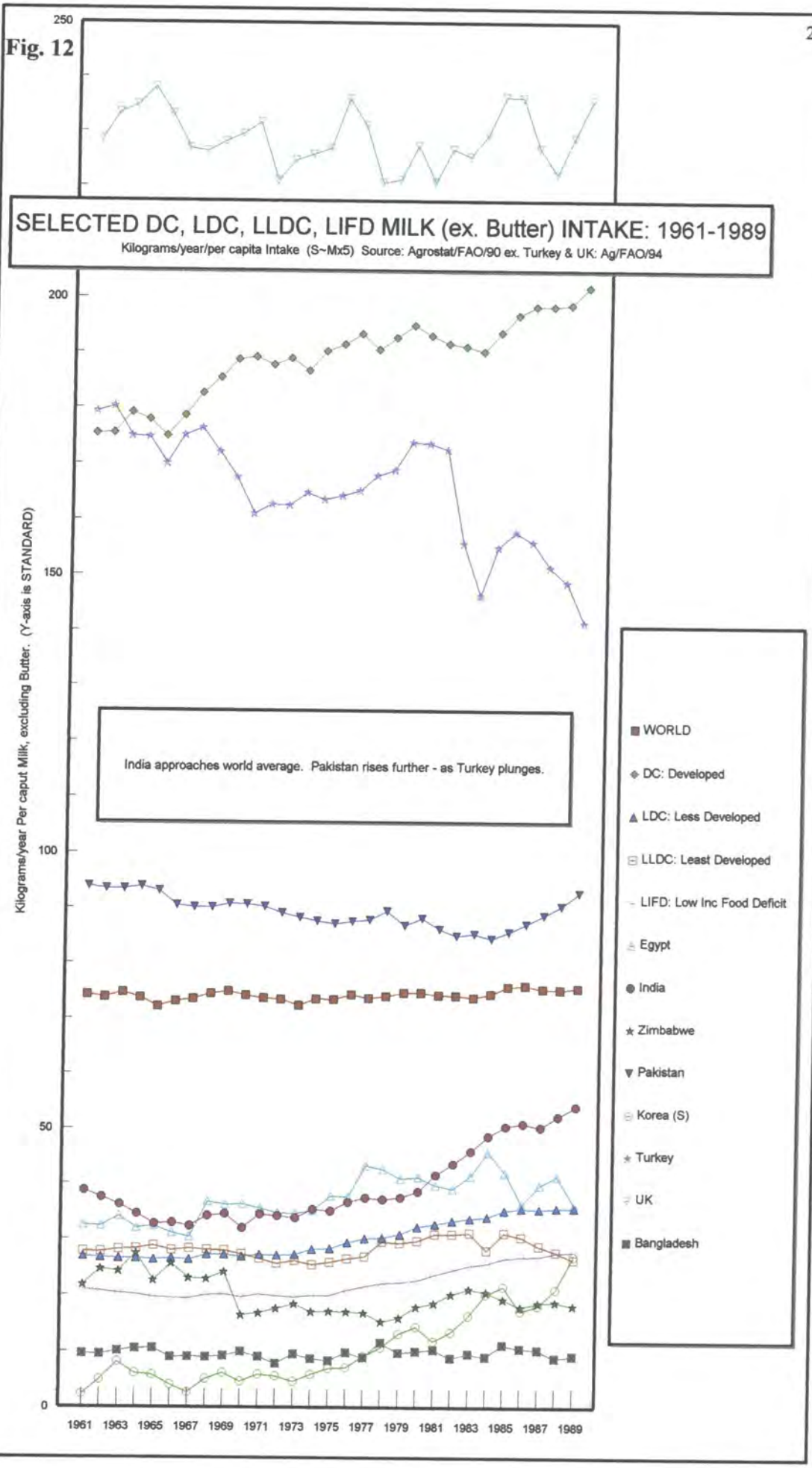
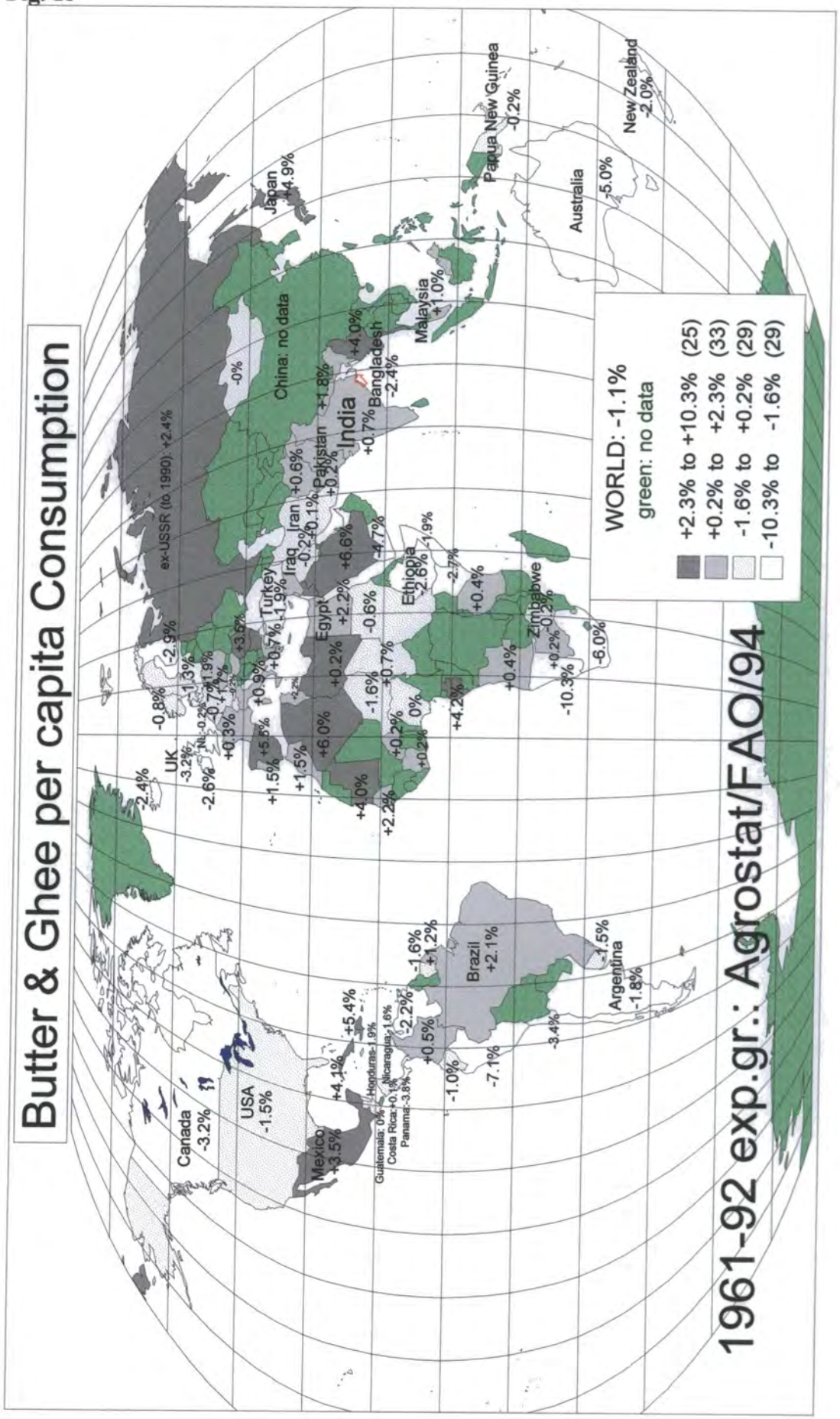

SELECTED DC, LDC, LLDC, LIFD MILK (ex. Butter) INTAKE: 1961-1989
Kilograms/year/per capita Intake (S~Mx5) Source: Agrostat/FAO/90 ex. Turkey & UK: Ag/FAO/94
Kilograms/year Per caput Milk, excluding Butter. (Y-axis is STANDARD)
250
200
150
100
50
0
1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989
India approaches world average. Pakistan rises further - as Turkey plunges.
WORLD
DC: Developed
LDC: Less Developed
LLDC: Least Developed
LIFD: Low Inc Food Deficit
Egypt
India
Zimbabwe
Pakistan
Korea (S)
Turkey
UK
Bangladesh

Fig. 15


Butter & Ghee per capita Consumption
1961-92 exp.gr.: Agrostat/FAO/94
WORLD: -1.1%
green: no data
+2.3% to +10.3% (25)
+0.2% to +2.3% (33)
-1.6% to +0.2% (29)
-10.3% to -1.6% (29)
ex-USSR (to 1990): +2.4%
China: no data
India +0.7%
Japan +4.9%
Australia -5.0%
New Zealand -2.0%
Papua New Guinea -0.2%
Malaysia +1.0%
Bangladesh -2.4%
Pakistan +1.8%
Iran +0.6%
Iraq -0.2%
Turkey +1.9%
Egypt +2.2%
Ethiopia -2.6%
Zimbabwe -0.2%
UK -3.2%
Canada -3.2%
USA -1.5%
Mexico +3.5%
Brazil +2.1%
Argentina -1.8%

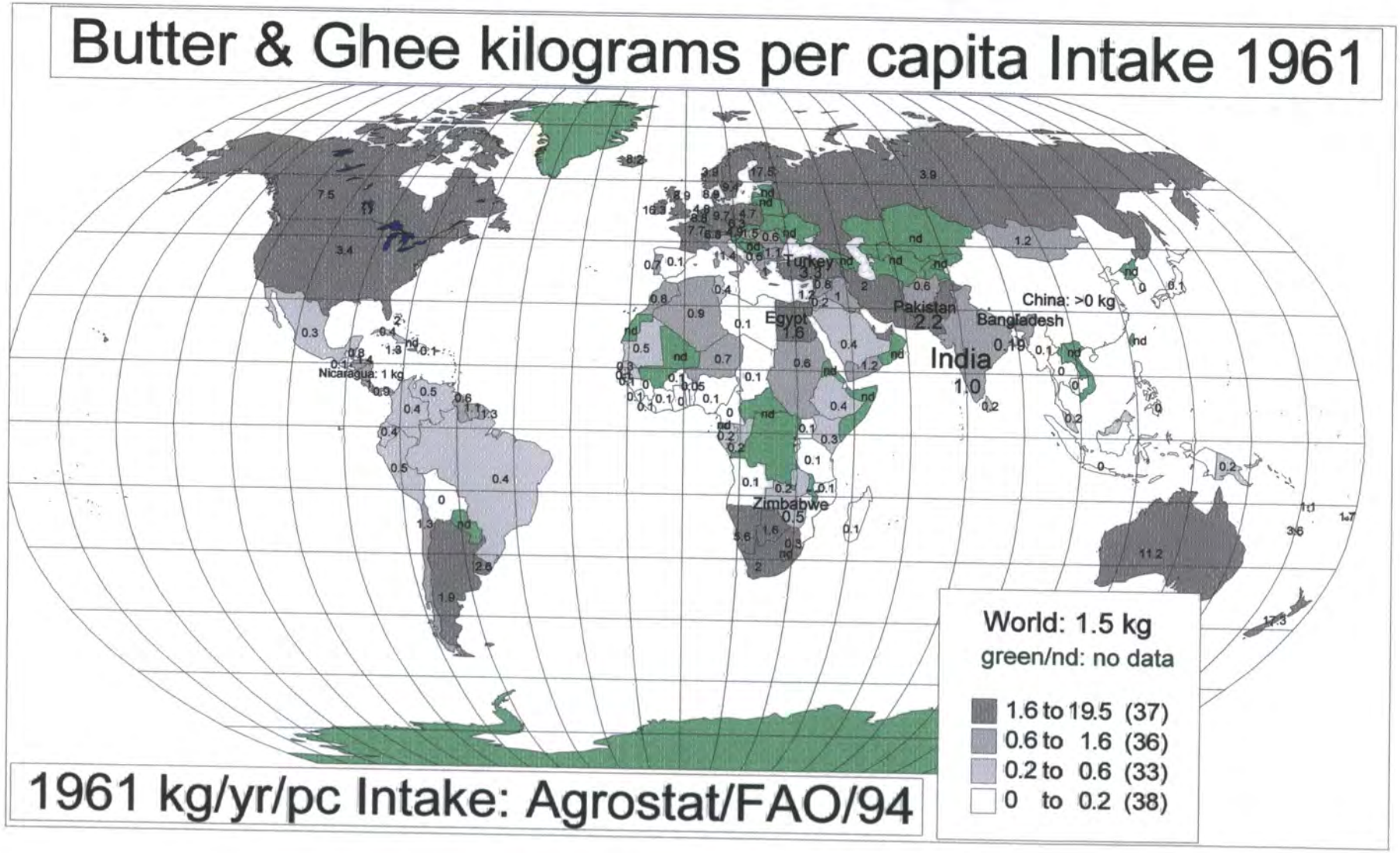
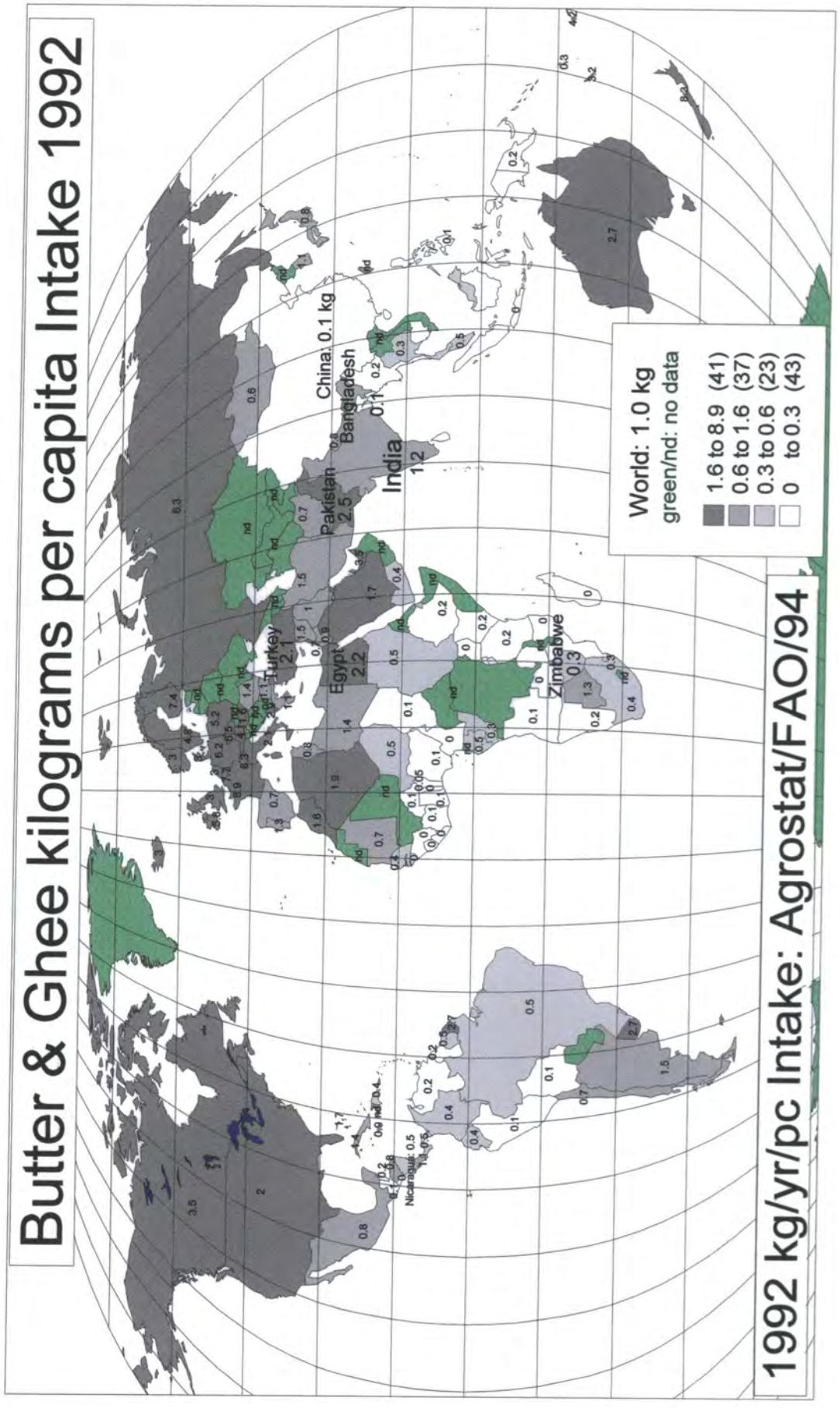
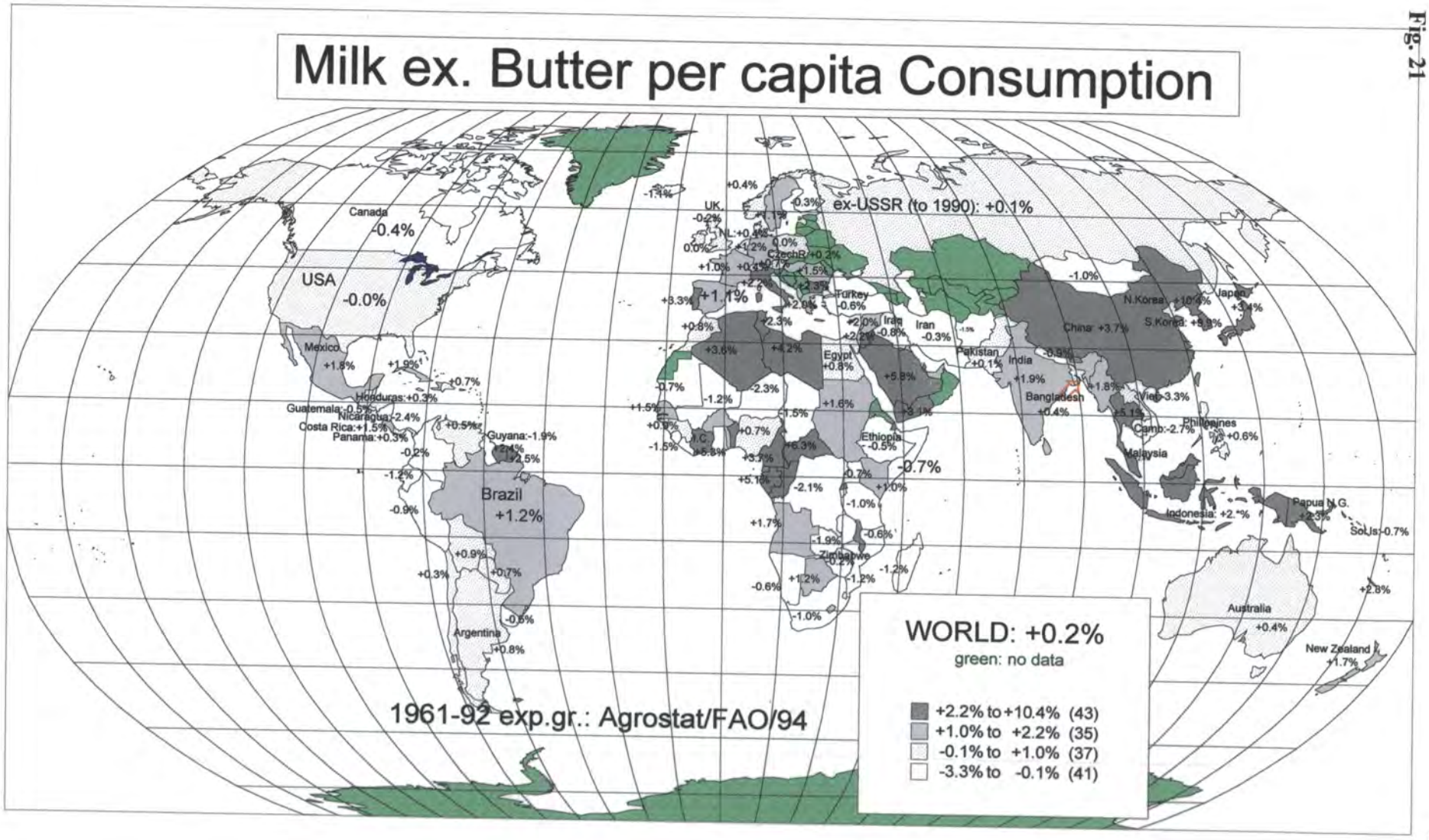

Butter & Ghee kilograms per capita Intake 1961
Nicaragua: 1 kg
Turkey 3.3
Egypt 1.6
Pakistan 2.2
India 1.0
Bangladesh 0.19
China: >0 kg
Zimbabwe 0.5
World: 1.5 kg
green/nd: no data
1.6 to 19.5 (37)
0.6 to 1.6 (36)
0.2 to 0.6 (33)
0 to 0.2 (38)
1961 kg/yr/pc Intake: Agrostat/FAO/94

Fig. 17

Fig. 19


Butter & Ghee kilograms per capita Intake 1992
China 0.1 kg
Bangladesh 0.1
India 1.2
Pakistan 2.5
Egypt 2.2
Turkey 2.1
Zimbabwe 0.3
Nicaragua 0.5
World: 1.0 kg
green/nd: no data
1.6 to 8.9 (41)
0.6 to 1.6 (37)
0.3 to 0.6 (23)
0 to 0.3 (43)
1992 kg/yr/pc Intake: Agrostat/FAO/94


Milk ex. Butter per capita Consumption
Canada
-0.4%
USA
-0.0%
Mexico
+1.8%
+1.9%
+0.7%
Honduras:+0.3%
Guatemala:+0.5%
Nicaragua:-2.4%
Costa Rica:+1.5%
Panama:+0.3%
+0.5%
Guyana:-1.9%
-0.2%
-1.2%
-0.9%
Brazil
+1.2%
+0.9%
+0.3%
+0.7%
-0.5%
Argentina
+0.8%
-1.4%
+0.4%
UK
-0.2%
-0.3%
ex-USSR (to 1990): +0.1%
NL:+0.4%
0.0%
+1.2%
0.0%
CzechR/+0.3%
+1.0%
+0.1%
+1.5%
+2.2%
+2.3%
+3.3%
+1.1%
+2.9%
Turkey
-0.6%
+0.8%
+2.3%
+2.0%
+2.2%
Iraq
-0.8%
Iran
-0.3%
+3.6%
+4.2%
Egypt
+0.8%
-0.7%
-1.2%
-2.3%
+1.5%
+0.9%
+1.6%
+5.8%
+3.1%
W.C.
-1.5%
+6.8%
+0.7%
+3.2%
+6.3%
Ethiopia
-0.5%
+5.1%
-0.7%
-2.1%
+0.7%
+1.0%
-1.0%
+1.7%
-1.9%
-0.6%
Zimbabwe
-0.2%
-1.2%
-1.2%
+1.2%
-0.6%
-1.0%
-1.0%
Pakistan
+0.1%
India
+1.9%
Bangladesh
+0.4%
+1.8%
+5.1%
China +3.7%
-1.0%
N.Korea +10.4%
Japan
+3.4%
S.Korea: +5.8%
Viet -3.3%
Camb:-2.7%
Philippines
+0.6%
Malaysia
Indonesia: +2.*%
Papua N.G.
+2.3%
Sol.Is:-0.7%
Australia
+0.4%
+2.8%
New Zealand
+1.7%
1961-92 exp.gr.: Agrostat/FAO/94
WORLD: +0.2%
green: no data
+2.2% to +10.4% (43)
+1.0% to +2.2% (35)
-0.1% to +1.0% (37)
-3.3% to -0.1% (41)

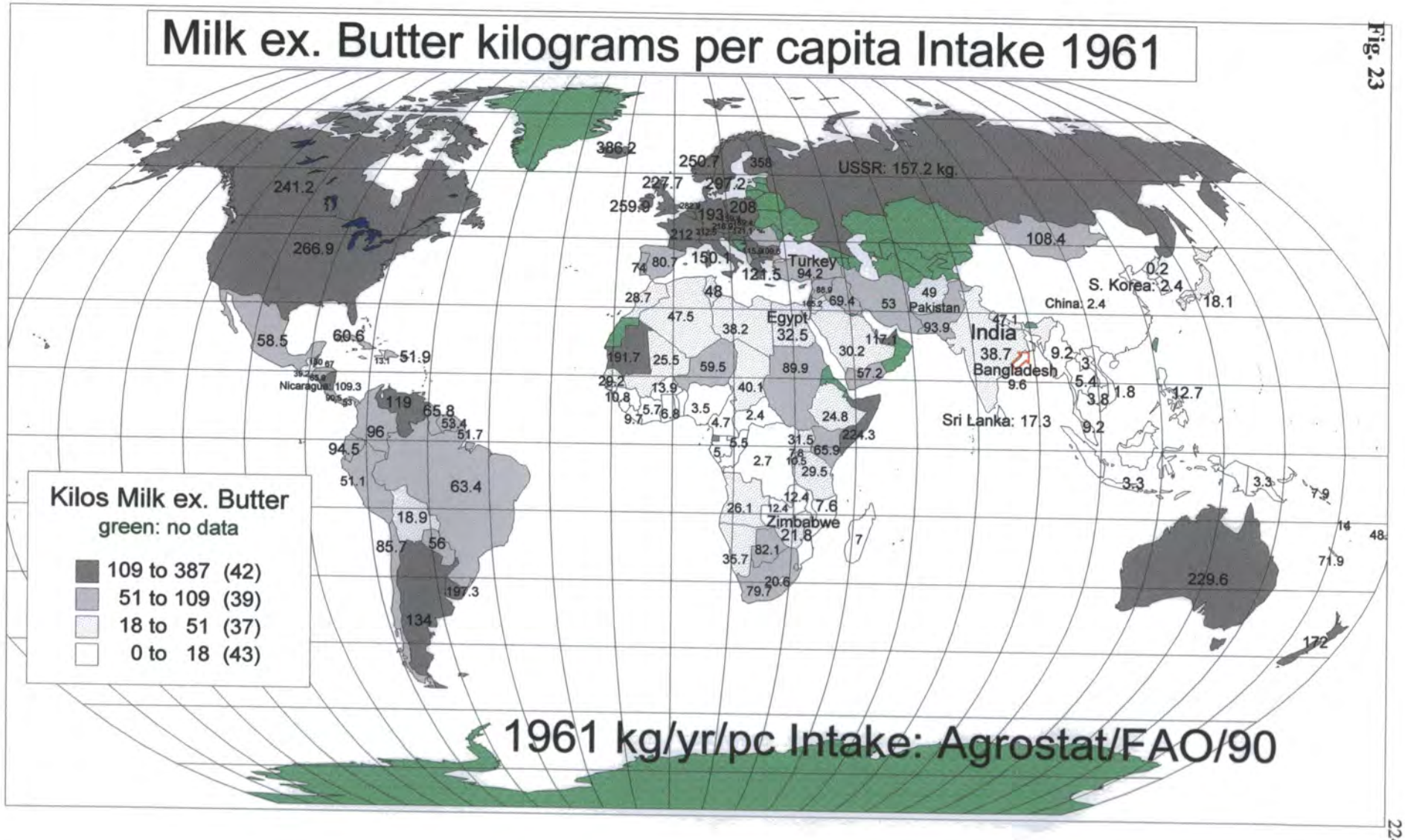

Milk ex. Butter kilograms per capita Intake 1961
Kilos Milk ex. Butter
green: no data
109 to 387 (42)
51 to 109 (39)
18 to 51 (37)
0 to 18 (43)
USSR: 157.2 kg.
Turkey
Egypt
India
Pakistan
Bangladesh
China: 2.4
S. Korea: 2.4
Sri Lanka: 17.3
Nicaragua
Zimbabwe
1961 kg/yr/pc Intake: Agrostat/FAO/90

Fig. 23

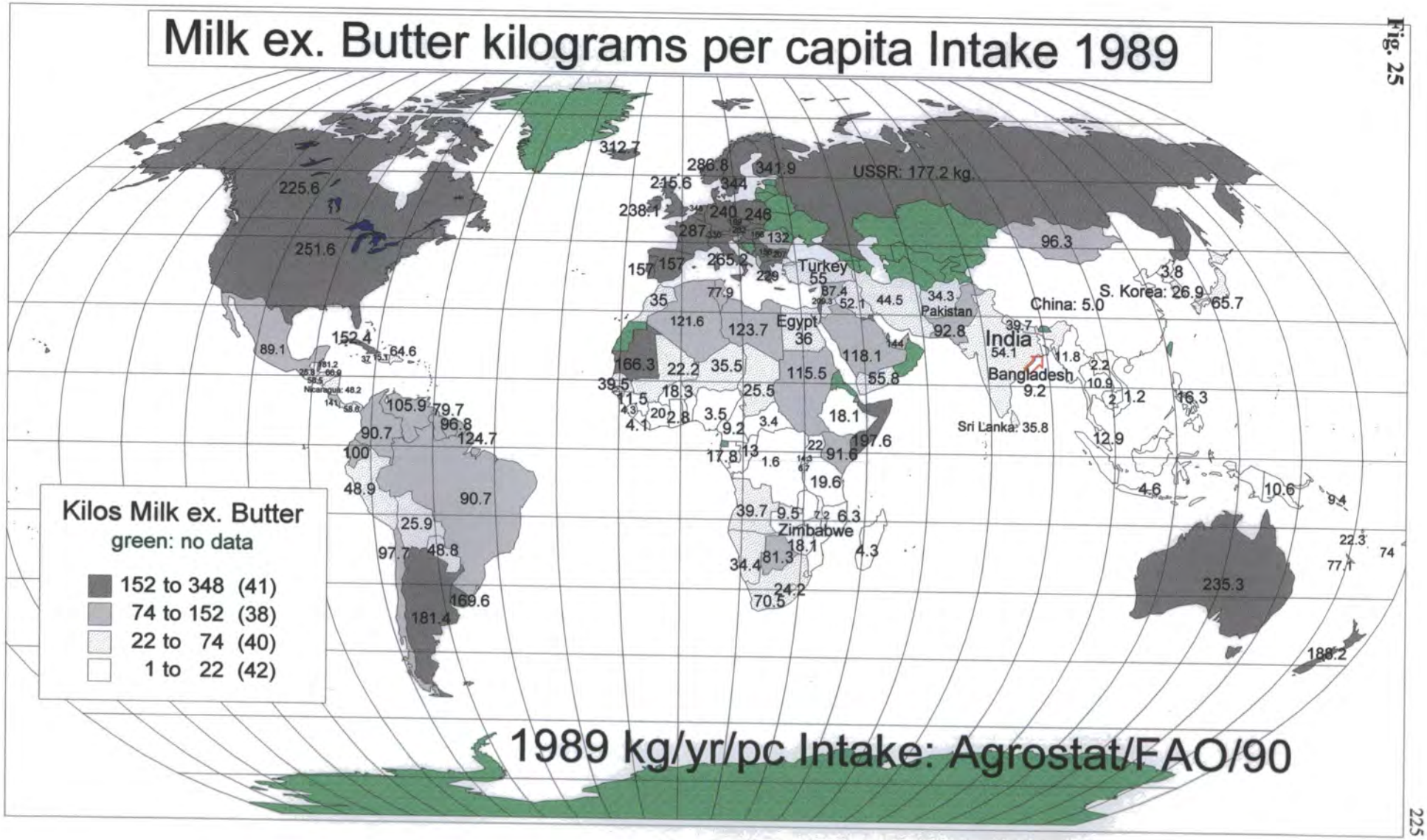

Milk ex. Butter kilograms per capita Intake 1989
Kilos Milk ex. Butter
green: no data
152 to 348 (41)
74 to 152 (38)
22 to 74 (40)
1 to 22 (42)
USSR: 177.2 kg.
China: 5.0
India
Bangladesh
Pakistan
Turkey
Egypt
Zimbabwe
S. Korea: 26.9
Sri Lanka: 35.8
Nicaragua: 48.2
1989 kg/yr/pc Intake: Agrostat/FAO/90

Fig. 25

Photos 2 & 3

Photo 2: One operator fills eight 25 kg. skimmed milk powder (SMP) bags per minute with the Sapac (NZ) rotary filler, at the Darigold farmers' cooperative plant in Lynden, Washington, USA (all photos).

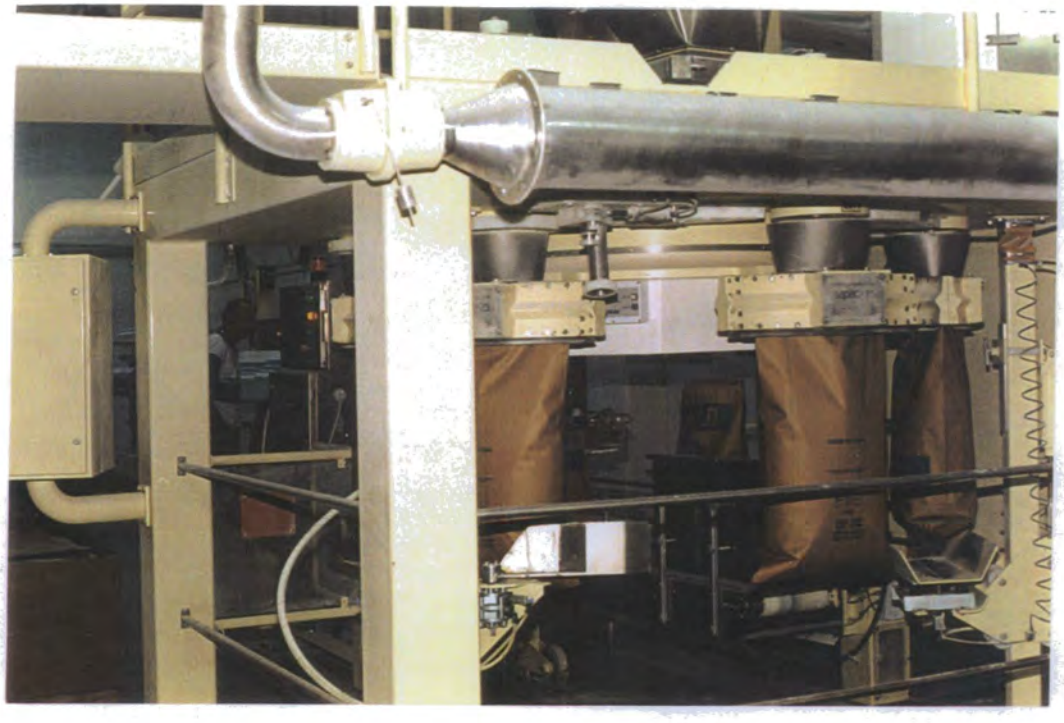


Photo 3: Dairy equipment from New Zealand (pictured) has been internationally popular for decades. France, Scandinavia, India and the US are also leading manufacturers of dairy processing equipment. Investment in similar plant and transport infrastructure by Indian cooperatives was criticised as wasteful, but it has helped to stabilise national milk supply over flush and lean months and during regional droughts.

Photos 4 & 5

Photo 4: US cooperatives rely more on refrigerated trucks than cooperatives do in India, but dairy systems in both countries rely on railways for bulk shipments. Instead of expensive refrigerated tankers and railcars, India's Operation Flood uses medium-tech, well-insulated railcars for lower-cost distribution.

Photo 5: *Warehouse workers at the Darigold plant, which can process over 4.5 million lbs. (2 million kg.) milk into 400,000 lbs. (182,000 kg.) SMP per day. Much is exported to Africa, parts of Asia, Oceania and South America. After 1985, the Dairy Export Incentive Programme (DEIP) and favourable exchange rates helped increase US sales in markets it once conceded to the EEC, Australia and New Zealand.*