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ALTERNATIVE STRATEGIES FOR DEVELOPMENT IN TONGA¹

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1. INTRODUCTION

The purpose in this paper is to consider the potential of small Pacific island nations and, in particular, Tonga, to achieve sustainable economic development. Mellor (1986) has argued that progress towards such a goal is most likely to be made by increasing the productivity of the agricultural sector and by generating employment opportunities in labour-intensive rural industries. His views contrast with those of Bertram and Watters (1985), who maintain that the nature and economic circumstances of the small Pacific islands militate against the success of efforts to expand sustainable productive activity. In particular, they claim that a high degree of dependence on overseas aid and remittances reduces the incentives for agricultural production. The implications of their arguments, and the extent to which they may be valid for Tonga, are discussed. It is concluded that, while Bertram and Watters have indeed pinpointed some genuine difficulties, these need not be insurmountable. Moreover, there are positive aspects of Tonga's economic situation which could be used to advantage provided appropriate policies are implemented.

2. STRATEGIES FOR ECONOMIC DEVELOPMENT - TWO VIEWS

2.1 Agriculture- and Employment-Based Strategy

Mellor (1986) argues that the best way to stimulate economic development in countries with low levels of industrialisation is through an 'agriculture- and employment-based strategy'. He claims that development efforts which have focused on industrialisation, import substitution, basic needs and export-led

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growth, to the neglect of agriculture, have generally met with little sustained success. While conceding that the agricultural sector is unlikely directly to produce high national growth in output and employment, he contends that there can be substantial indirect effects, provided government policies are appropriate. The essence of the strategy is to stimulate growth in agricultural production through 'continuous, institutionalized technological change' (p. 69). This will result in increased incomes for agricultural producers, and a consequent rise in their demand for 'a wide range of goods and services with a high employment content' (p. 71). Steps must be taken to ensure that the production of such goods and services is undertaken primarily in rural areas, so that rural employment increases. Meanwhile, the increased agricultural output causes a decline in food prices, which decreases the cost of non-agricultural labour relative to the value of its production. Employment therefore increases, and the consequent increase in incomes brings about a rise in domestic demand for both agricultural and non-agricultural output.

Mellor points out that if increases in agricultural income are to stimulate growth, they must be brought about by increases in agricultural output, and not simply by increases in commodity prices. The supply of capital must also increase rapidly if employment is to do the same. Much of the needed capital can be generated within the prospering agricultural sector itself, with market mechanisms stimulating increased savings and promoting the required transfer of resources to non-agricultural activities.

Industrialised countries, says Mellor, can make an important contribution to the implementation of an agriculture- and employment-based strategy through both trade and aid. As trading partners, they must be willing to purchase the labour-intensive products of the non-industrial countries and in return supply them with the capital-intensive goods and services required for employment-generation. As aid donors, the industrialised nations should focus particularly on education and on infrastructure development. Education is essential because the agricultural research, extension and input supply systems must be developed and maintained by large numbers of trained staff. The data needed for policy appraisal and formulation must also be collected and analysed. Infrastructure such as rural road networks is also essential to the success of the agriculture- and

employment-based strategy, both for the dissemination of new technologies and for the marketing of agricultural output and non-agricultural goods and services. Foreign aid might also be necessary during the early stages of development to finance the importation of capital-intensive goods and services.

The crucial conditions for the success of Mellor's proposed strategy may be summarised as follows:

- (a) the agricultural research network must have a high capacity for continuous technology development, and the extension network must have a high capacity for promoting the adoption of improved technologies;
- (b) agricultural producers must respond to the available technological improvements by adopting them in such a way as to increase production;
- (c) a substantial proportion of increases in agricultural income must be spent on labour-intensive goods and services produced in rural areas;
- (d) increases in incomes outside the agricultural sector must also be spent largely on labour-intensive goods and services;
- (e) local food prices should fall in response to increased supplies;
- (f) the production of non-agricultural goods and services should be as labour-intensive as possible, while any essential capital-intensive components may be imported; and
- (g) the capital stock must grow rapidly.

While Mellor's argument has much appeal, a contrary view about the prospects for sustainable development of small Pacific island countries has been put forward by Bertram and Watters (1985), as outlined in the following section.

2.2 'Mirab' Strategy

Bertram and Watters (1985) coined the acronym 'mirab' to describe small island states of the Pacific, characterised by high levels of labour migration, reliance on remittances and aid, and large bureaucracies. Whereas development economists in the South Pacific have tended to regard these four 'mirab' factors merely as components of the development process, Bertram and Watters argue that, together, they determine the course of development. Change is not endogenous but, rather, takes place in response to external factors. Households maximise utility by taking advantage of economic opportunities overseas as well as at home. Kin groups seek to place members in 'metropolitan' countries (e.g. New Zealand, Australia, USA), and those members retain close links with their relatives at home. They send remittances and periodically exchange visits. Within the country, the government sector is the main source of wage employment, and internal migration to administrative centres is common. Aid is used to finance government sector employment and import purchases, as there are few opportunities for productive investment. In this sense, aid is effectively a rent, 'dissociated from any directly productive activity on the part of the recipient' (Bertram and Watters 1985, p. 500). Moreover, real exchange rates are held up by large aid and remittance flows, thereby discouraging domestic production of tradeables. These various effects will tend to divert resources out of agriculture into other income-earning opportunities, some possibly overseas, accessed using ties to kin groups in metropolitan countries. The result, say Bertram and Watters, is the observable stagnation or decline of village agriculture; a result incompatible with Mellor's agriculture- and employment-based development strategy.

Bertram and Watters argue that it is wrong to view the mirab system as purely transitional and temporary. Aid flows are likely to continue over the long term, and remittances are maintained by the regular renewal of kin group links (e.g. through visiting) and by a steady flow of new migrants. Incomes, consumption and government finance are all sustainable over a 'considerable period of time' (p. 513). In consequence, the authors assert that it is more rational for island governments to concentrate on maintaining their entitlements to 'rent' receipts such as aid and remittances, rather than to attempt to develop agricultural and other productive activities. However,

although village agriculture stagnates or declines, basic subsistence needs are still attainable within the village economy. It might therefore be more useful to direct aid into agricultural production rather than into the maintenance of unwieldy and unproductive bureaucracies.

2.3 Discussion

Some features of a mirab economy are clearly antithetic to an agriculture- and employment-based strategy of the type advocated by Wallor. For example, mirab societies are supposed to experience declining or, at best, stagnant agricultural sectors while both wage rates and food prices are likely to be driven up by the excess demand fuelled by remittance and aid flows. The highly valued foreign exchange rates will tend to inhibit the development of cash cropping for export and cause problems for farmers trying to compete with imported foods in the domestic market. Moreover, a highly valued exchange rate makes it difficult for labour-intensive industries to become established in those cases where there is competition from imports. These problems may be exacerbated in a small economy such as Tonga because of the diseconomies of small-scale production, even in some fairly simple manufacturing processes. The open nature of the economy may tend to be amplified by the 'western' consumption patterns of returned migrants as well as by the spending patterns of expatriates employed on aid projects. All these factors would tend to militate against the capture within the economy, and especially within the rural economy, of any benefits of improved agricultural technologies.

Yet there could be other factors that would counterbalance these unfavourable considerations. A small economy may be easier to manage than a large one. There is less diversity and so the task of gathering information about the system for purposes of economic management should be simpler. Moreover, a few modest successes in, for example, establishment of labour-intensive industries, can have a large relative effect on the macroeconomy. Large aid flows, on a per caput basis, certainly could provide resources to get things done that should assist development substantially, provided that the money is used wisely. Similarly, remittances should provide individual households with capital for productive investment that they would not otherwise have. Finally, because of the small scale of Tongan production, efforts to expand export production in agriculture or elsewhere should

generally encounter near-perfectly elastic demand. Only for a few special products or in a few highly segmented export markets will prices be driven down by increased sales.

The critical question, therefore, is whether an agriculture- and employment-based development strategy could be effective in Tonga or whether, as Bertram and Watters imply, the mirab characteristics of the society effectively close off opportunities for real growth in the domestic economy. Some evidence is presented in section 3.

3. THE CASE OF TONGA

3.1 Mirab Characteristics

Migration statistics for Tonga are incomplete, but it has been estimated that about 40 000 Tongans work overseas (Roberts 1987), in comparison with a resident population of just under 100 000. From 1976-79, permanent migration has been estimated at 600 people per year and short-term migration at 500 people per year (Central Planning Department 1981, p. 107). Data collected from specific villages as part of the ACIAR-funded South Pacific Smallholder Project, and summarised in Table 3.1, show the importance of what Bertram and Watters (1985) call the 'transnational corporation of kin'. In nearly all of the sample households (100 of 114), the household head and/or other relatives had travelled overseas. The overseas ties appeared to be particularly strong in the two villages studied on the main island of Tongatapu (Ha'akame/Ha'alalo and Navutoka), where a large proportion of households reported the receipt of remittances, and where remittances contributed a large part of average household income.

The significance of remittances at the national level is shown in the balance of payments figures in Table 3.2. While the value of imports has consistently been much higher than the value of exports, the resulting negative trade balance has been largely offset by receipts from remittances and tourism. For instance, in 1979/80 a trade deficit of T\$17.8 million was counterbalanced by remittance and tourism receipts of T\$14.5 million, resulting in an overall balance of payments deficit of less than T\$2.9

Table 3.1
Tongan Villagers' Contacts Overseas

	Village ^a			
	H	N	M	K
Household heads interviewed	28	30	26	30
- male	24	24	23	28
- female	4	6	3	2
Households in which head had been overseas	7	21	9	7
Households in which head had not been overseas but other relatives had been overseas	17	8	14	17
Households reporting receipt of remittances	19	15	5	1
% of sample households' total income received as remittances	46.8	28.2	12.7	3.1

^a H: Ha'akame-Ha'ala'alo, Tongatapu; N: Navutoka, Tongatapu;
M: Mataika, Vava'u; K: Ha'ano, Ha'apai.

Source: South Pacific Smallholder Project questionnaire data.

Table 3.2
Balance of Payments by Components, 1973/74-1979/80

Year	Dir. of Flow	Exports /Imports T\$000	Tourism /Travel T\$000	Remit- tances T\$000	Other T\$000	Total T\$000
1973/74	Rec.	3 384	2 106	3 847	685	10 022
	Pay.	7 516	226	182	1 351	9 275
	Diff.	-4 132	+1 880	+3 665	-666	+747
1974/75	Rec.	5 678	3 355	6 545	2 108	17 686
	Pay.	13 960	278	301	2 892	17 431
	Diff.	-8 282	+3 077	+6 244	-784	+255
1975/76	Rec.	3 586	3 380	6 607	1 101	14 674
	Pay.	12 846	44	497	2 484	16 268
	Diff.	-9 259	+2 939	+6 110	-1 383	-1 594
1976/77	Rec.	3 718	3 803	7 327	1 781	16 629
	Pay.	13 383	757	782	3 441	18 363
	Diff.	-9 666	+3 046	+6 545	-1 660	-1 734
1977/78	Rec.	6 722	3 878	7 670	2 800	21 070
	Pay.	16 369	604	379	4 321	21 673
	Diff.	-9 647	+3 274	+7 291	-1 521	-603
1978/79	Rec.	5 132	3 795	9 834	3 621	22 382
	Pay.	20 012	314	385	3 801	24 512
	Diff.	-14 880	+3 481	+9 449	-160	-2 130
1979/80	Rec.	6 508	4 543	11 318	4 931	27 300
	Pay.	24 310	954	401	4 521	30 186
	Diff.	-17 802	+3 589	+10 917	+410	-2 886

Source: Statistics Department (1983), pp. 128-30.

million. Remittances and other gifts sent to Tonga have exceeded the value of exports in each of the six years from 1974/75 to 1979/80. However, these data may overstate the importance of remittances somewhat. Such transfers are often in exchange for private shipments of agricultural or handicraft products, which either are not recorded or are grossly undervalued in 'exports'.

Aid flows into Tonga in 1985 totalled US\$13.6 million, or about US\$143 per caput, while the GNP in the same year was about US\$80 million. In comparison, aid contributions elsewhere in the Pacific ranged from US\$13 per caput in Nauru to US\$1167 per caput in Niue (Cole and Dorrance 1987, pp. 48-9). According to the mirab theory, the main role of overseas aid is in the purchase of imports and the maintenance of the bureaucracy. It is asserted that few productive investment opportunities exist. This situation is probably less true of Tonga than of some of the smaller island states discussed by Bertram and Watters (Cook Islands, Tuvalu, Tokelau, Kiribati and Niue). Published figures do not show any overseas contribution to Tonga's recurrent budget, and only a small share (1-3 per cent) of the largely overseas-financed development budget is specifically allocated to 'general administration'. While some of the money allocated to the service sectors is undoubtedly channelled into activities which are not directly productive, there have been major investment opportunities for aid donors in recent years. In agriculture, projects focusing on vanilla, bananas and coconuts have attracted overseas funding, while infrastructural developments such as road, harbour and wharf reconstruction and airport upgrading have also been financed by overseas aid.

However, there is no doubt that the bureaucracy is a considerable force in the Tongan economy. According to the 1976 census (Kingdom of Tonga undated), there were 7131 wage and salary earners in the Kingdom, of whom 4550, or 64 per cent, were employed by government. However, this percentage is not as high as in micro-states such as Tokelau, Niue and Kiribati, where the bureaucracy accounts for over 80 per cent of wage employment (Bertram and Watters 1985, p. 500). Moreover, nearly 11 500 of the total 18 626 employed persons in Tonga in 1976 were non-wage or salary earners, and 9200 of these were in agriculture. In addition to these, even full-time government employees are often part-time farmers.

Watters (1987, pers. comm.) considers Tonga to be 'a clear example' of a mirab system. "Invisibles" including aid, remittances and tourism would appear to be the driving force of the Tongan economy, not commodity exports.' The above discussion confirms that Tonga does exhibit the main characteristics of a mirab economy, although to a less extreme degree than the islands analysed by Bertram and Watters (1985). Permanent and temporary migration are both common, but are constrained by immigration restrictions. Remittances are large but are frequently disguised payments for exported produce. Aid contributes a large proportion of the development budget but not (apparently) of the recurrent budget, and at least some of it is used to finance productive activities. Finally, the bureaucracy is the major cash employer, but agriculture remains the predominant source of livelihood for most Tongans.

3.2 Evidence on Scope for Sustainable Development

Conditions necessary for the success of an agriculture- and employment-based strategy were summarised in section 2.1. Evidence concerning the extent to which these conditions can be satisfied in Tonga is presented in this section.

3.2.1 Farmer response to incentives

Part of the mirab hypothesis is that remittances reduce the incentive to work. However, data from the South Pacific Smallholder Project do not support this contention. A regression analysis of the determinants of householders' time allocation revealed that remittance income is positively related to time spent in agricultural work. One possible reason for this is that it is the harder-working families that have succeeded in penetrating overseas labour markets. Another is that remittance income is being used to purchase productive inputs, such as tractor time, which increase the area farmed. More research will be needed to resolve this question.

Historical evidence also confirms that Tongan farmers do respond positively to profitable new opportunities. For instance, vanilla production expanded dramatically following promotional efforts by the Ministry of Agriculture, Fisheries and Forests (MAFF) dating from the late 1970s and a fourfold increase in the world market price in 1979. In 1980, a total of 113

ha had been planted to vanilla in Vava'u, of which just 20 ha had reached maturity. By 1984, the total area was 411 ha, of which 119 ha were mature. The approval of an ADB-funded National Vanilla Development Project in 1984 appears to be providing further stimulus, both in Vava'u and in other island groups.

Sales of crops on the domestic market have also expanded greatly over the past two decades or so. Maude (1965, p. 151) describes how 'Saturday is market day: in Nuku'alofa part of the main street is then closed to traffic and those with produce to sell line both sides of the road, sitting on shop verandahs or on the road itself'. With increases in the volumes of produce for sale it became necessary to open a permanent market, Talamahu, in 1970, with 46 lockable stalls and 80 open stalls with concrete tables (Government of Tonga 1971). An adjacent large area was converted to covered stall-space in 1984 to accommodate further growth. Similarly, in Vava'u, Sailoame Market was opened in 1977. It is evident that agricultural producers have responded positively to increased demand from the growing urban population. In particular, the diversity of vegetables supplied to both Talamahu and Sailoame markets is increasing, with many more farmers growing 'European' vegetables such as capsicum, carrots, beans and zucchini (MAFF Planning Unit 1986).

Supply response studies for root crops (by Fleming 1986) and bananas (by Mallon 1986) reveal some interesting points. First, it is evident that suppliers to Talamahu market (predominantly producers themselves) are not a homogeneous group in terms of their behaviour. The studies show that some producers respond to price increases by increasing their marketed surpluses, while others reduce their levels of surplus. This does not necessarily indicate that producers alter their production decisions in response to price changes; they may modify consumption behaviour or, in the case of those who increase surplus in response to higher prices, redirect part of their surplus from the export to the domestic market.

Second, both studies indicate a positive supply response to price by those producers supplying the export market. It appears, therefore, that producers supplying the export market and some supplying the fresh produce market in Tonga respond to price incentives. On the other hand, the 'subsistence affluence' theory expounded by Fisk (1964) is consistent with the

behaviour of those producers who reduce surplus in response to price increases. The apparent existence of profit-oriented market vendors alongside subsistence affluent ones suggests that a process of change is underway with traditional attitudes progressively giving way to more commercial values.

Both Fleming and Mallon concluded that price incentives alone would be unlikely to result in significant increases in agricultural production, as price elasticities of supply are low. Indeed, as Mellor emphasises, the key to increasing agricultural production in the long run lies not in higher domestic prices but rather in supply shifts induced by technological change.

3.2.2 Agricultural research and extension capacity

The Research Division of MAFF is centred around a Research Farm on the main island, Tongatapu, where experimental work in crop production, animal production and plant protection is carried out. A new research laboratory was opened in 1982, while farmer training and laboratory facilities in the northern island region of Vava'u were completed in 1985. Extension staff man the small demonstration plots in other islands. In 1981 there were just four Tongan agricultural scientists employed in the Research Division (Gamble, Bourke and Brookson 1981). While at least three others have returned from overseas training since then, and several more are currently studying abroad, the shortage of trained staff is still acute.

According to the head of the Advisory Division of MAFF (A. Sisifa 1985, pers. comm.), there are as yet no examples of a technology being developed by the Research Division, passed on to extension agents, and implemented in farmers' fields. For instance, crops such as black pepper appear to be responding favourably in Research Farm trials, but the chain between research and adoption appears virtually non-existent. On the other hand, some new crops, such as zucchini, are promoted by extension officers in response to market demand, but have had no prior Research Farm testing.

While Sisifa is certainly overstating his case somewhat, there is no doubt that too little in the way of improved technology suited to farmers' circumstances has come from the research effort to date. Moreover, it is

clear that communication problems exist that have inhibited transfer of such improved technologies as have been developed and have also impeded the flow of information to researchers about what priorities in research are needed. These communication problems have been recognised, and are apparently beginning to improve following the creation of a Research/ Advisory Liaison Officer position (Central Planning Department 1987, p. 182).

Both the Research and Advisory Divisions are hampered by a shortage of trained staff and by financial restrictions. The share of recurrent government expenditure allocated to the agriculture, fisheries and forests (AFF) sector as a whole ranged from 5.8 to 11.0 per cent over the 1977/78 to 1986/87 period, whereas the AFF contribution to GDP was over 40 per cent. Budgeted allocations of development expenditure have been higher in proportionate terms and have risen over time from 17.5 per cent during 1965-70 to 34.0 per cent during 1980-85. However, difficulties have been experienced in spending the allocated sums. Actual development expenditure in the AFF sector during 1980-85 ranged from 6.6 to 24.3 per cent of the total budget. Moreover, nearly half of the spending on agriculture was allocated to just three projects - banana revitalisation, coconut replanting and vanilla (Table 3.3). All three comprise packages of assistance to selected growers. In contrast, less than 8 per cent of development funds are allocated to general research and a negligible amount to extension (although there are specific research and extension components under other headings).

The picture that emerges is one of very narrowly focused efforts to improve the technology of agricultural production. Priority has been given to two cash crops - export bananas and vanilla - that are grown by limited numbers of commercially-oriented producers. The coconut replanting program has a wider potential application but has been considerably reduced in scope in recent years. There has been negligible investment in attempts to improve production methods of the more widely grown food crops.

3.2.3 Local food prices

According to Mellor, in order for the expansion of the agricultural sector to serve as a stimulus for national economic development, prices of agricultural produce must fall. In particular, local foods should become more

Table 3.3
Breakdown of AFF Sector Development Expenditure 1980-85

Item	Total expenditure	Proportion
	T\$000	%
Banana Revitalisation Scheme	1029	28.1
Coconut Replanting Scheme	382	10.4
Vanilla	350	9.6
Research	283	7.7
Other crops	146	4.0
Mechanisation	111	3.0
Veterinary and livestock	67	1.8
Extension	52	1.4
Other	6	0.2
	----	----
Total Agriculture	2426	66.4
Forestry	365	10.0
	----	----
Total Agriculture and Forestry	2792	76.4
	----	----
Fisheries	865	23.6
	----	----
Total AFF	3656	100.0

Source: Data provided by Central Planning Department, Tonga.

price competitive in relation to imported foods. There is no indication that this has been happening in recent years in Tonga. Price indexes for local and imported foods from 1976 to 1986 are graphed in Figure 3.1. While local prices rose less than import prices up to 1982, this trend was generally reversed during the 1982-86 period. The close relationship between the domestic and international economy, characteristic of a mirab system, is clear from the figure. In fact, the correlation coefficient between local and imported food prices is over 0.95. A regression analysis of the effect of import prices on local prices has an R^2 of nearly 0.91 and there is no significant time trend in local food prices when the effect of rising import prices has been accounted for.

This result is unsurprising. In open small developing economies, the aggregate domestic food demand function is typically well to the right of the domestic market supply function at imported food price levels. A simple representation of this situation is given in Figure 3.2 (assuming away the complexities caused by lack of perfect substitutability between different food products). The imported food supply function (MS) is assumed to be perfectly elastic; the domestic market supply function (DS) is characterised as generally inelastic tending to perfectly inelastic as quantity increases; and the domestic market demand function (MD) is assumed to be quite inelastic.

A shift of the domestic market supply function to DS' has the effect of increasing the amount of food supplied by local producers from OQ_1 to OQ_3 , and reducing the amount of food imported from Q_1Q_2 to Q_3Q_2 . Price of food (OP_0) is unaffected by this shift and local food producers reap all additional surplus.

A major constraint on narrowing the food import gap in Tonga has been the retention of the exchange rate at current levels by substantial remittance and aid flows. Without these flows, exchange rate devaluations might have caused an upward shift (in domestic currency prices) of the import supply function to MS' (and an increase in price to OP_1), thereby narrowing the food import gap from Q_1Q_2 to Q_4Q_3 . The extent of this narrowing is likely to be limited by the inelastic domestic demand and supply functions for food.

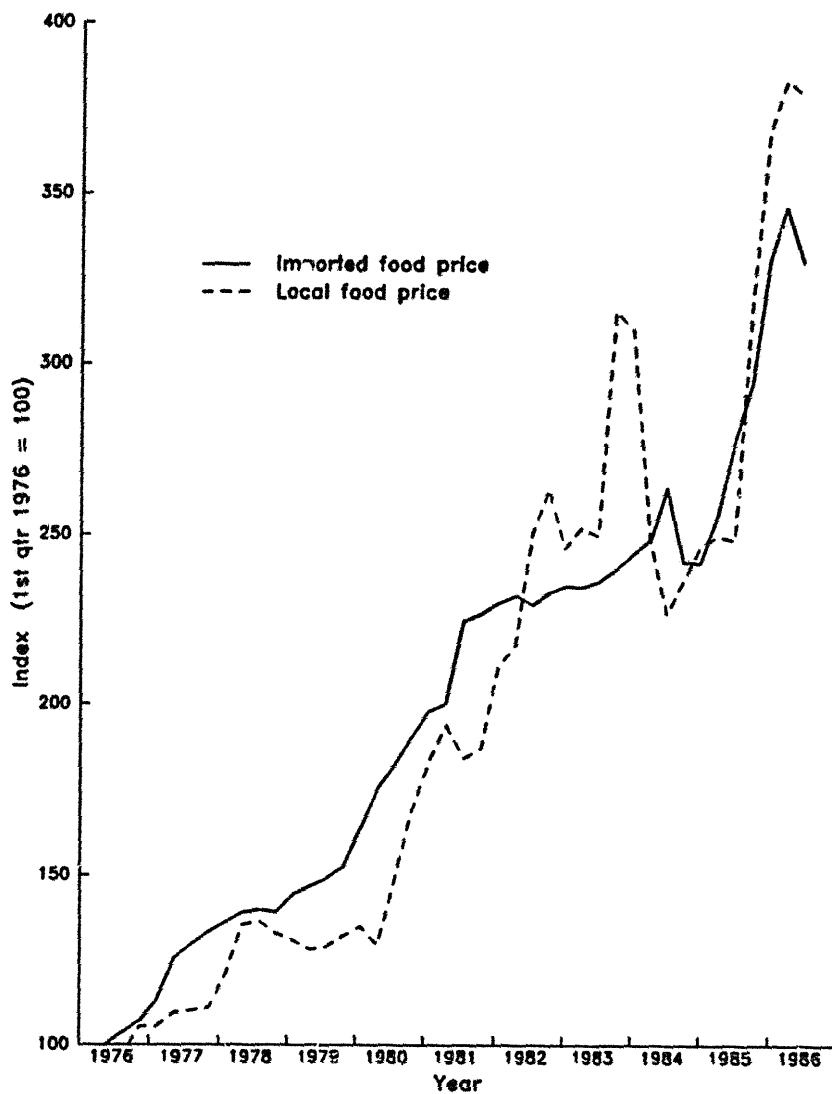


Figure 3.1 Indexes of imported and local food prices, 1976-86

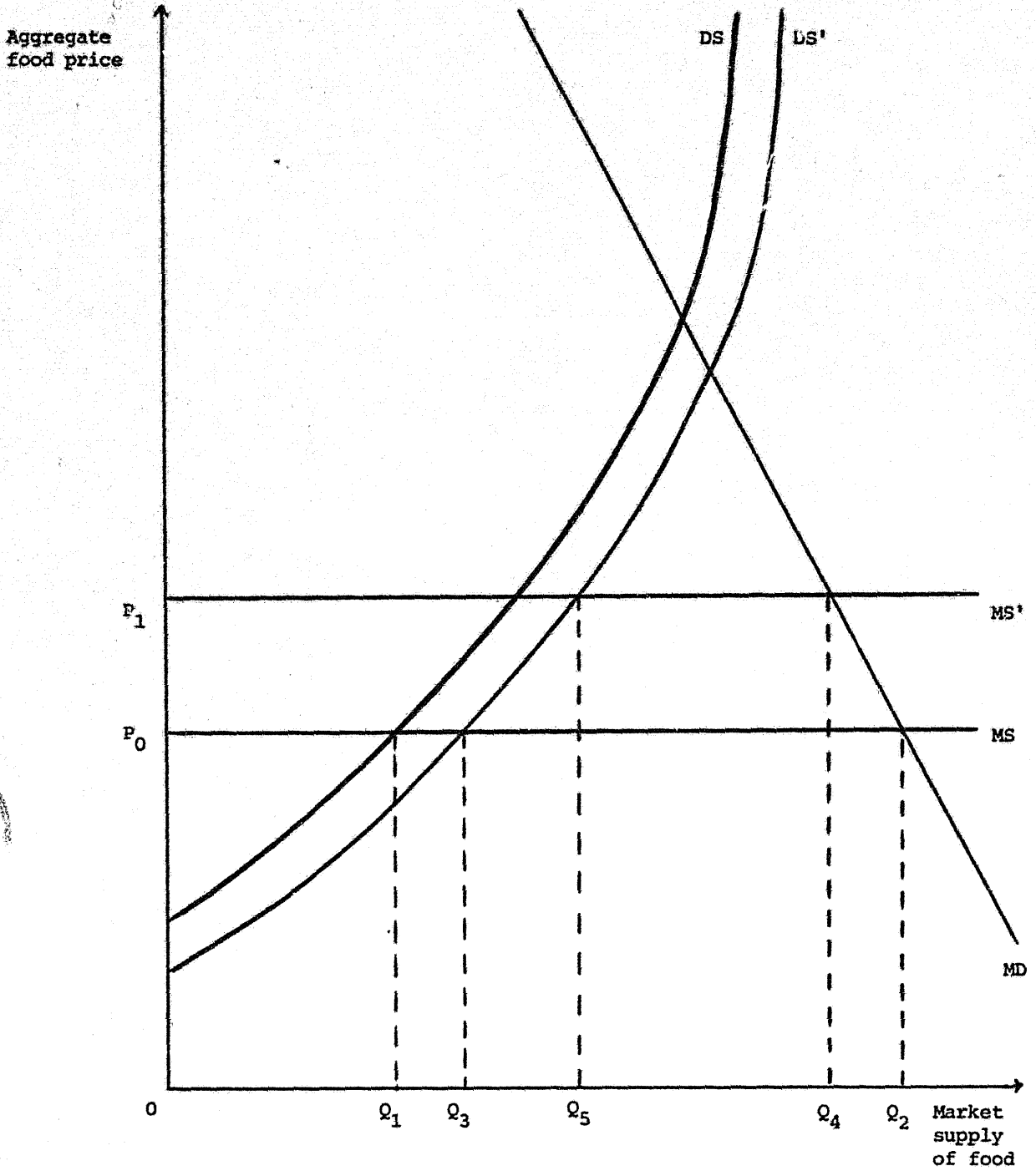


Figure 3.2 A simplified illustration of the food market in a mirab economy such as Tonga.

The evidence is that little headway has been made in Tonga in achieving shifts of domestic food supply to narrow the food import gap. For instance, the real value of food imports rose 38 per cent from 1976 to 1984 (Table 3.4). For a few individual products (such as some European vegetables and eggs), there has been considerable progress towards self-sufficiency. These are usually products that are perishable, costly to transport and susceptible to damage in handling and transport. For many other food products which entail substantial marketing services, notably processing, progress in closing the import gap has been negligible. For the Mellor strategy to work, this gap must be closed by substantial technology-based rightward shifts in supply that will effectively bring down food prices below import parity.

3.2.4 Expenditure patterns

The success of Mellor's preferred development strategy depends in part on the propensity of both agricultural producers and the non-agricultural work force to purchase labour-intensive goods and services, particularly those produced within rural areas. The Muda region of Malaysia and the Gusau region of Nigeria are described by Hazell and Roell (1983) as suitable targets for this type of development strategy. Muda in particular has strong linkages to the rural non-farm sector. In a five-commodity classification (home-produced food, locally-produced food, imported food, locally-produced non-food, imported non-food), the marginal budget share for locally-produced non-food items is 37 per cent. For Tonga, marginal budget shares were estimated from the first six months of South Pacific Smallholder Project data for three villages (Kingston and Antony 1986). The classification of commodity groups differed from that of Hazell and Roell, in that home-produced foods were excluded and no distinction was made between locally-produced and imported non-food items. However, a simple reclassification results in the comparison shown in Table 3.5(a). The marginal budget share for all non-food items is 83 per cent in two of the Tongan villages, compared with 69 per cent in Muda and 47 per cent in Gusau. The approximate distribution of marginal non-food expenditure between local and imported products can be estimated with reference to the average budget shares for all five commodity groups, shown in Table 3.5(b). Locally-produced goods and services account for between 24 and 38 per cent of all non-food expenditure in the four villages. Much of this takes the form of donations to church funds, some of which may be exported,

Table 3.4
Food Imports into Tonga, 1976-84

Year	Current value of imports	Imported food price index ^a	Deflated value of imports	Index of real import values
	T\$000		T\$000	
1976	3296	103.8	3175	100.0
1977	4744	130.1	3647	114.9
1978	6220	140.6	4424	139.3
1979	6989	150.4	4647	146.4
1980	7095	185.6	3823	120.4
1981	8638	220.3	3921	123.5
1982	8936	232.3	3847	121.2
1983	9922	238.8	4155	130.9
1984	10967	249.2	4401	138.6

^a 1st quarter 1976 = 100

Sources: Statistics Department (1983), Statistics Department (1985a),
 Statistics Department (1985b).

Table 3.5
Budget Shares in Tonga, Muda and Gusau

Item	Tongan Village ^a				Muda	Gusau
	H	N	M	K		
(a) Marginal budget shares						
Local food	15	41	8		16	41
Imported food	2	18	9		14	11
Non-food	83	41	83		69	47
(b) Average budget shares						
Food						
Home-produced ^b	32.42	33.40	26.48	73.53	27.21	56.00
Locally-produced	8.99	9.51	4.59	0.68	19.21	19.26
Imported	17.20	19.95	12.60	9.22	20.27	5.40
Non-food						
Locally-produced	27.52	28.12	34.67	12.41	18.05	8.43
Imported	13.85	9.02	21.66	4.17	15.27	10.91
Total local	68.94	71.03	65.74	86.62	64.46	83.69
Total imported	31.06	28.97	34.26	13.38	35.54	16.31
Total	100.00	100.00	100.00	100.00	100.00	100.00
Equivalent \$ value	92.54	89.82	139.74	53.00		

^a H: Ha'akame-Ha'alalo, Tongatapu; N: Navutoka, Tongatapu;
M: Mataika, Vava'u; K: Ha'ano, Ha'apai.

^b Estimated value of home-produced food consumed within the household.

Sources: Kingston and Antony (1986) and own calculations for Tonga;
Hazell and Roell (1983) for Muda and Gusau.

but much of which tends to be spent on rural church construction, thereby generating local employment opportunities.

Marginal budget shares for local (purchased) foods are relatively low in Mataika village, but the Ha'akame/Ha'alalo figure is similar to that for Muda, while Navutoka and Gusau are the same in this regard. The average budget shares for this category are lower in the Tongan villages than in Muda and Gusau. The proportion of value of home produced food is similar to the Muda figure in three of the four Tongan villages, but markedly higher in Ha'ano. Ha'ano is situated in a poorly-developed region of Tonga, where there are few cash-earning opportunities outside agriculture and fishing, and limited marketing infrastructure.

Overall, the distribution of expenditure between locally-produced and imported items is more favourable in the Tongan villages than in Muda, since the Tongans spend a lower proportion on imports. However, it is of some concern that the richest of the four Tongan villages, Mataika, has a relatively high expenditure on imported non-food items. This suggests a high income elasticity for such goods. Further evidence is provided by Drilon (1987), who found that imported foods have considerably higher income elasticities than local foods. Moreover, an input-output study of the Vava'u region of Tonga by Faletau (1985) showed that (a) the average multipliers of sectors in the Vava'u regional economy are quite low, (b) production-induced multiplier effects are especially low, and (c) there is a lack of linkages between the agricultural sector and the rest of the regional economy. These results show the need for measures to capture a greater share of any increased agricultural prosperity within the local economy if an agriculture- and employment-based strategy is to succeed.

3.2.5 Non-agricultural production

Labour-intensive and rurally-based production of non-agricultural goods and services is necessary in order for the benefits of increasing agricultural incomes to be spread widely. The growth of such industries may be supposed best to come from progressive adaptation and development of indigenous skills in areas such as handicrafts, house and boat building. The household data collected showed that women spent an average of 11.5 hours/week on handicraft

production, while men spent about 3.5 hours a week on productive activities other than agriculture, fishing and wage labour. Four of the 16 employed persons in the Ha'akame/Ha'alalo village sample worked in the construction industry, and even in remote Ha'ano there was one local entrepreneur building boats and houses. But, by and large, there has been no policy in Tonga to encourage such developments. Rather, steps have been taken to encourage foreign investment relying largely on technologies that are imported and, therefore, often somewhat too capital and import intensive. The various incentives offered have attracted investment into several light industries, chiefly located around Nuku'alofa, the main urban centre. Other investment in manufacturing has been concentrated on post-harvest processing of coconuts and copra, both using highly capital-intensive methods.

3.2.6 Capital stock

An essential requirement for an agriculture- and employment-based development strategy is that capital stock must be expanded rapidly in both agriculture and rural industries. As noted in section 2.3, a mirab country has a potential advantage in this regard because of large inflows of aid and remittances. Total current account receipts into Tonga rose from \$10 million in 1973/74 to over \$30 million by 1979/80 in current dollar terms - an increase of about 170 per cent in real terms (Statistics Department 1983, pp. 128-30). So far as aid is concerned, the difficulties appear to lie not so much in obtaining adequate capital, but in setting appropriate priorities and in mustering the necessary complementary resources (e.g. trained staff) to ensure that funds allocated are in fact spent.

Mellor argues that capital can be generated within the agricultural sector from increased savings. This proposition appears to be supported for Tonga by the work of Wilson (1987) who used a Tobit analysis on South Pacific Smallholder Project data to examine factors affecting the level of household savings. His results showed a high positive association between savings level and income from wages and sale of agricultural produce. However, interestingly, the inclusion of remittances in the model 'was found to yield inconsistent results', suggesting that the propensity to save from remittance income may be low or even negative. If this is indeed the case, it would be a further area of conflict between a mirab characteristic and the successful

implementation of an agriculture- and employment-based strategy. Means of capturing a proportion of remittances as savings would need to be found. For example, the relatively recent introduction of a sales tax in Tonga can be seen as a way of forcing compulsory saving on remittance incomes spent on consumption.

4. DISCUSSION AND CONCLUSIONS

The crux of the economic argument advanced by Bertram and Watters in relation to mirab societies is not easy to isolate. However, one important component is that overseas remittances break the nexus between increased local production and increased economic welfare. Bertram and Watters assert that normal incentives to expand local production are thereby rendered inoperative (p. 512). But here they appear to have overstated their case. While the incentive to expand local production may be reduced by receipt of remittance income, and while the supply price of labour to productive activities may be increased relative to the utility of leisure or of opportunities for income earning overseas, this does not mean that the incentive will be completely inoperative. If local production opportunities exist, or can be created, that yield good returns to effort, the experience with vanilla in Tonga shows that they will be taken up. The finding that remittances do not reduce time input of families into production also runs counter to the assertion of inoperative incentives.

The implication for development is that sustainable upward shifts in the agricultural production function are needed if stagnation or decline are to be avoided. The means to achieve such shifts must be sought through a more effective agricultural research program combined with further improvements in extension, input delivery and output marketing. It seems, therefore, that the relative failure of agricultural research in Tonga is a major impediment to overall economic development and is a matter urgently in need of attention.

There are a number of points to be made in support of the proposition that an agriculture- and employment-based development strategy is not closed to a country such as Tonga that undoubtedly displays many mirab characteristics. First, the government of the country has the power to stem

some of the mirab effects. For example, aid flows can be restricted both absolutely and to capital funding of carefully selected, socially profitable projects. To implement such a policy will require improved planning skills, especially in project identification in the productive sectors, including agriculture. A lack of worthwhile projects is the chief factor limiting the capacity for effective absorption of aid in Tonga as in many other South Pacific island countries.

Government can also influence the real exchange rate, first by avoiding measures that tend to keep it artificially high. It is doubtful, for example, whether it is wise for the Tongan pa'anga to remain tied to the Australian dollar. A flexible rate might well bring some devaluation.

Moreover, the effects of remittances and aid flows on the macroeconomy of a country like Tonga are by no means confined to the exchange rate effects. As noted above, there are effects on incomes, savings and investment. The scope exists, therefore, to use a variety of policy measures, such as taxation, to mitigate the unfavourable consequences and to capitalise on the potential benefits of these inflows. At present, Tonga does not have a Reserve Bank. That function is performed by the commercial Bank of Tonga. Plans are now in hand to form a Reserve Bank which, when established, would increase the capacity of the government in macroeconomic management.

Similarly, while it is certainly true that consumption patterns and resource allocations will be different in a mirab economy from what might exist if aid and remittance flows were less, it is not automatically the case that domestic agriculture must decline. The new pattern of consumption may create new and profitable opportunities for farmers, as evidenced in Tonga by the expanded production of fruits and vegetables for the urban markets. Further, both aid and remittance flows can relax capital constraints inhibiting rural production. As noted earlier, aid in Tonga has been used extensively for infrastructural improvements, most of which have brought benefits of better market access to many agricultural producers. Some remittances are used for farm working capital, for example to pay labour and tractor costs for land clearing and cultivation. Moreover, the tendency to divert remittances to consumption might be reduced by further promotion of existing schemes which encourage rural people to save - for example, village

development groups in which regular contributions from members are banked and later spent on village improvement projects - as well as by identifying and promoting profitable investment opportunities in agriculture and in the rural economy generally.

One severe impediment to successful adoption of an agriculture- and employment-based strategy in Tonga would appear to lie in the fact that, as shown above, local food prices have been rising quite sharply in recent times and consequently wage rates have also been driven up. No doubt mirab effects on both supply and demand are partly responsible. A major effort will be needed to reverse this trend. Improved production technologies for staple crops are an essential first step. But more far-reaching changes may be needed. By their nature, the tropical root crops are better suited as subsistence than cash crops. There is a need to develop improved methods of post-harvest handling to reduce marketing costs and to increase the appeal of local produce relative to more convenient imported substitutes. In addition, other production incentives, such as subsidised inputs, may also be needed. As Bertram (1986, p. 818) notes, there exists a range of other policy options that would effectively turn the terms of trade more in favour of the village economy.

Another potential problem for the successful implementation of Mellor's strategy is that, while village households do appear to spend their incomes substantially on local goods and services, the indications are that income elasticities of imported items are high. Action will be needed if the benefits of agricultural development are to be captured in the local rural economy. Moreover, as noted above, the linkages between agriculture and other sectors in Tonga are weak. Yet the amplification of gains from agricultural development within the local rural economy is a key component of the agriculture- and employment-based development strategy. Measures to promote labour-intensive local industries and to strengthen inter-sectoral linkages are therefore needed. However, promotion of labour-intensive rural industries is unlikely to be easy. The extremely low production-induced multiplier effects in the Vava'u regional economy are indicative of the lack of progress made so far in the establishment of rural industries outside agriculture. The immensity of the task required to generate increased non-agricultural activity

in rural areas has not been matched by public commitment of funds and other resources.

At present, industrial policy in Tonga is largely geared towards attracting foreign investors. While the light industries recently established collectively provide a not inconsiderable level of employment, Mellor's argument suggests that these successes are unlikely to form a sound basis for development of the whole economy. An industrial enclave may have been created which has little trickle-down effect to the rest of the economy. The reasons are several and include the following:

- (a) Substantial government investment and subsidy payments have been necessary to attract the investment. The opportunity cost of these funds may be considerable.
- (b) Those industries with an export orientation depend on low wage rates and on employment conditions favouring the employers. Should real wages be driven up by any means, at least some investors may remove their operations to other countries.
- (c) Profits of foreign-owned companies may be repatriated. Moreover, there are concessionary tax arrangements for investors. Little of the surplus produced is likely to be ploughed back into the Tongan economy.

For these sorts of reasons it seems that the present enthusiasm for industrialisation in Tonga, in so far as it is achieved at the expense of efforts to develop the rural sector, may be misplaced. A major re-examination of the present policy is called for. This should begin with a comparison of the domestic resource costs of agriculture, existing industries and potential rurally-based, labour-intensive operations. The opportunities for, and impediments to, the expansion of industries of the latter type should also be explored. Steps likely to be needed to promote rurally-based industries include a redirection of existing industrialisation incentives, overhaul of education and training programs to produce more people with relevant skills, and revision of the lending priorities of Tonga Development Bank.

Overall, the hypothesis that the mirab characteristics of the Tongan economy prevent the successful implementation of an agriculture- and employment-based development policy remains open. Some auguries are good and others not so good. In so far as agriculture has to date failed to develop as a leading sector of the economy, the causes can be attributed as much to deficiencies in policy and resource allocation as to mirab characteristics. Because of the special features of its economy, it may not be easy for Tonga to follow successfully the strategy so convincingly expounded by Mellor. On the other hand, the alternative offered by Bertram and Watters of continued dependence on aid and remittances is hardly an attractive one. Nor is it clear that such a future is sustainable indefinitely. There is therefore a need for a real effort to be made to achieve sustainable development, not only to raise material living standards of those Tongan families remaining at home, but also as an essential step to the attainment of true national pride and independence.

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