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ISSUES IN MACROECONOMIC POLICY AND AGRICULTURE

Keith Ward and Bruce Carrad



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MEDIUM TERM DEVELOPMENT STRATEGY:

ISSUES IN MACROECONOMIC POLICY AND AGRICULTURE

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DEPARTMENT
 OF THE ARMY
 OFFICE OF THE ADJUTANT GENERAL
 WASHINGTON, D. C.

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KEITH WARD and BRUCE CARRAD
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Introduction and Summary

This paper defines the theory and practice of macroeconomic policy making in PNG since Independence, and its impact on, and implications for, the agricultural sector. The individual, but not entirely separable, elements of exchange rate management, wages policy and fiscal and monetary policy have together provided a stable but not dynamic arena for agricultural development. Several consequences of policy harmful to the agricultural sector are identified, and solutions suggested within the context of current policy tools. It is further suggested that new and more positive measures are now needed to be taken in view of the stagnation of the agricultural sector as regards the provision of productive employment opportunities.

Specifically it is proposed that PNG take the necessary steps to facilitate more rapid agricultural growth. This will be encouraged by:

1. an aggressive stance to attract investment from domestic and overseas sources, and the development of a logical set of policies on land, credit and taxation.
2. the establishment of a Land Development Division within DPI to identify, design and monitor large scale agricultural projects for joint venture participation with government.
3. the preparation of development programmes for less developed areas and integrated development of agricultural and transport projects.
4. a programme of research and development be undertaken to increase the supply to urban and institutional consumers of traditional staple foods. Once this programme has commenced the price of rice should be increased.
5. a programme of agricultural research to generate and evaluate improved technology for production, processing and marketing of agricultural products, especially export tree crops.

1. The agricultural sector, including fisheries and forestry, contributes about one-third of total output in PNG, employs over 80% of the population and contributes about 50% of export earnings. A sector of such relative size in the economy is obviously going to be greatly affected by macroeconomic policy making and implementation.

2. The main elements of macroeconomic policy in PNG can be grouped as follows:

1. exchange rate policy (especially the 'hard currency' policy);
2. wages policy;
3. fiscal and monetary policy.

These elements have been combined together to produce an overall macroeconomic policy whose aim can be described as the establishment and maintenance of 'internal balance' and 'external balance' together with an efficient allocation of resources. These policies in Papua New Guinea's context should facilitate the process of development in contributing to fundamental objectives related to growth in economic output and the distribution of income within the context of PNG's 'Eight Aims'.

3. 'Internal balance' involves the balancing of demand for goods and resources and services of various kinds against the availability of them at essentially stable long-run average prices. In PNG's case the most important resource which should be in equilibrium is the labour force, so 'internal balance' can be taken to mean full employment of labour at little or no inflation.

4. 'External balance' involves, at a minimum, the balancing of demands upon the authorities (i.e. the Bank of PNG) from individuals or institutions wanting to convert domestic currency into foreign exchange, against the availability of that foreign exchange to the authorities. This implies a more-or-less stable level of foreign exchange resources sufficient to meet variations in foreign exchange requirements, at official exchange rates. Because PNG's main source of foreign exchange is from agricultural commodity and mineral earnings which may well exhibit marked variability in prices between years, the maintenance of 'external balance' must be undertaken over at least the medium term.

5. 'Internal' and 'external' balance are therefore the necessary, but not sufficient, conditions upon which the development of the economy must rest. As well as the maintenance of overall balance Government must pursue other policies to actively promote development.

6. Because of the prominence of the agricultural sector within the economy, fundamental macroeconomic policy is bound to impact greatly on the agricultural sector and to largely determine the parameters within which sectoral and microeconomic policies should be set. Indeed, agricultural policy could be seen as the fourth component of macroeconomic policy, with equal weight as exchange rate, wages and fiscal/monetary policies.

Agricultural policy on which to base project design has been sadly lacking. While we have had enunciated macro policy and micro projects (the 'cutting edge' of development) we have had no clearly defined sectoral goals for either public or private investment. The major growth for public investment has been the NPEP, and project design has largely been related to broad aims such as 'economic production', 'rural welfare' etc. rather than to industry or regional goals. Project design has therefore had no sectoral directives.

7. The individual elements of macroeconomic policy and the issues they raise for the agricultural sector in the medium term can now be described. These elements are interrelated and must be seen within the context of macroeconomic policy as a whole.

Exchange Rate Policy

8. Since Independence in 1975 the successive Governments of PNG have followed essentially what has become known as the 'hard currency' strategy. This is in fact the core of macroeconomic policy making. It involves: the maintenance of a kina that at least holds its value against major world currencies; the virtually free convertability of kina into foreign exchange; restraint on public expenditure and wages to avoid balance of payments problems at the chosen exchange rate; and the use of variations in reserves to reduce domestic instability associated with fluctuations in the external economy, together with low inflation.. The 'hard kina' strategy was designed in the 1970's at the time of Independence in the view of Papua New Guinea's position as a small, open, economy exporting primary commodities. It was felt that the most pressing consideration following Independence was the maintenance of a stable economic environment within which investment (and hence growth and development) would take place. A 'hard kina' policy implied the maintenance of a particular exchange rate (essentially against the Australian dollar at first and latterly a basket of currencies of PNG's main trading partners), if necessary adjusting internal expenditures and revenues to avoid running the large budget deficits which would inevitably lead to devaluation.

9. The maintenance of strong currency was held to be especially critical in view of the high degree of 'openness' of PNG'S economy (imports being some 44% of GDP and exports 33% in 1982 for example), where any devaluation of local currency without other controls implies 'imported inflation' of a high order. It was further held by the designers of the 'hard kina' strategy that inflationary tendencies would

translate into proportional rises in wage costs through the minimum wages legislation mechanism, and thus PNG's 'competitiveness' would remain unimproved. The 'hard kina' policy was therefore seen as a policy of real wage and inflation containment; it was a stability - first strategy, involving a determination for PNG to live within its means.

10. It was of course realised that such a strategy would have consequences for import-competing and export industries, the majority of which are agricultural. The maintenance of a strong kina keeps import prices relatively low, thus affording little or no protection to developing competing local industries, and also lowers domestic receipts of export earners (as prices of PNG's exports are expressed in US \$, £, A \$ etc, and the country is essentially a price-taker in international markets). However, it was judged that the problems of PNG's import-competing and exporting industries were primarily structural and logistical, in that high average costs resulted from transport and communication difficulties and small markets sizes, and would not be solved through a "soft kina" approach. It was felt that:

"the most valuable incentive to the expansion of import-competing production ".....was..... "general economic growth in the whole economy. The same conditions that are favourable to growth is the economy as a whole are favourable to investment in import competing production; a stable economic environment; including clear and stable administration of policy; labour policies conducive to internal balance; the avoidance of distortions through taxation on other policy instruments..... In addition, general economic growth expands the size of domestic markets and increases the range of domestic industries for which the local market is sufficiently large to support efficient domestic production". (Garnaut and Baxter, 1982)

11. The argument therefore ran that growth and development in the agricultural sector would result from a macroeconomic policy which provided overall stability given PNG's particular economic characteristics (especially the openness of its economy and the minimum wage legislation procedures), even though this might appear to discriminate against agricultural development in the short run. The 'hard kina' exchange rate policy has been maintained in essence since 1975, as table 1 below, shows. Appreciation of the kina against the \$ Australian, £ sterling, \$ NZ has been most marked, with maintenance of its value against the US \$ and the Deutschmark, and slight depreciation against the strong Yen and S \$.

TABLE 1
The foreign exchange value of the kina 1976-82
(K=units offoreign currency, and indexes end 1975=100)

End of Period	\$A	\$US	YEN	DM	\$HK	STG	\$NZ	\$ S'PORE
1975	1.00	1.26	383	3.29	6.15	0.62	1.27	3.14
1976	1.13	1.23	361	2.90	6.00	0.72	1.30	3.02
1977	1.16	1.32	317	2.77	6.14	0.69	1.30	3.09
1978	1.26	1.45	281	2.65	6.97	0.71	1.37	3.14
1979	1.31	1.45	348	2.50	7.16	0.65	1.48	3.13
1980	1.32	1.55	315	3.50	7.92	0.65	1.63	3.24
1981	1.30	1.47	323	3.31	8.34	0.77	1.80	3.01
1982 M	1.31	1.38	341	3.33	8.04	0.77	1.80	2.94
1982 J	1.32	1.35	344	3.34	8.02	0.78	1.82	2.92
1982 S	1.36	1.29	349	3.27	8.04	0.76	1.80	2.82
1982 O	1.36	1.28	325	3.28	8.77	0.76	1.80	2.82

Source: Bank of Papua New Guinea.

Over the whole period from monetary independence to 1982 the kina increased in value by 9% against a trade - weighted basket of currencies. Since that time it has depreciated slightly against the Australian \$, substantially against the US dollar and appreciated slightly against Sterling.

12. Several points need to be made about specific effects on the agricultural sector. Firstly, the argument hinges on whether or not exchange rates are neutral to agriculture. The argument has been advanced (Garnaut, Baxter) that they are, with harder rates protecting consumers from "inflation tax" effects on real incomes. Thus the lower prices received are cancelled out by lower consumer item prices, particularly imported imported inflation. As so much of producers' kina is spent on imported goods this is held to be particularly important. Much of this argument is accepted, although the complete neutrality of agriculture is not.

Secondly, the impact on domestic food producers has been negative and internal balance has not been maintained. Rice prices have fallen by around 50 % over the period 1975-1984 as a result of efficiencies in production in Australia and exchange rate movements and imports have increased by 100 %. This has contributed to a situation where rural producers do not supply what consumers want - namely rice. The urban and institutional staple is now rice and its inclusion in village diets is increasing, particularly where seasonal cash crop incomes are highest. This has reduced the growth of effective demand for domestic staples (sweet potatoes, taro, banana etc.), blocked marketing improvements and contributed to continued high staple prices. Irrespective of the cause and effect argument as to why domestic staple food prices have not come down since Independence, the availability of ever-cheaper rice has relegated

domestic food production to a position of lesser importance in the eyes of leaders and the public. This has also contributed to, in part, why disease problems in taro (colocasia) have been ignored for so long and why additional resources to assist domestic producers to grow and market their own crops have not been allocated as rigorously as they would have had domestic food industries been more of a pressing issue. With a few exceptions (the SLUP project, the AFTSEMU team in SHP and in a very small way the food processing unit in Lae) PNG has disinvested in food technology because increasing our ability to feed ourselves has become a non issue. Whilst there have been nutritional benefits from food imports (particularly tinned fish and rice) in exchange for cash wages at a wider level, access to cash incomes often discriminates against women and children at a household level. reduced opportunities for internal trade have also resulted and long term problems of food dependency will result.

Thirdly, the imported component of export crops has increased markedly (see fig. 1) benefitting the users of capital (plantations) rather than the users of labour. Whilst this has probably been a nett gain in terms of productivity, it has encouraged large rather than small-scale agriculture.

Wages Policy

13. The second most obvious feature of macroeconomic policy making in Papua New Guinea has been the formulation and implementation of a national policy on wages. PNG has a tradition of Government intervention in the labour market which goes back to 1907, and this distinguishes it from competing and comparable countries. Essentially, the structure now in place was determined by the sittings of the Minimum Wages Board between 1972 and 1975. Urban and rural minimum wages had been defined, and increases in these are provided for on the basis of : rises in the cost of living (as defined by the CPI), some 'basic needs' criteria or, in the case of plantation employees, 'capacity (of plantations) to pay', or some mixture of these.

14. The overall economic situation as a result of wages policy can be summarised in the following tables:

Table 2 compares daily, minimum wage rates in agriculture and manufacturing in 1978 for selected countries in the Asia/Pacific region. It can be seen that PNG labour costs are high in relation to other countries.

TABLE 2 : MINIMUM WAGE RATES IN SELECTED COUNTRIES, 1978
(US\$/day)

	Agriculture	Manufacturing
Indonesia	n.a.	0.60-1.75/a
Malaysia	1.88-3.27	3.86-5.91
Papua New Guinea	2.58	6.99/b
Philippines	1.55-1.74	1.85-2.03
Sri Lanka	0.65-0.84	0.90/c
Thailand	1.23-1.38	1.72/b
Western Samoa	2.72	3.40

/a Unskilled construction workers, urban and rural.

/b Urban minimum wage.

/c Public sector minimum wage.

Obviously the relatively high cost of labour has a tendency to discourage plantation activity and manufacturing production for export, reduce possibilities for import-substitution industries and intensify the search for labour-substituting techniques of production. There exists, according to the World Bank

"scattered but ample evidence that the (general) level of wages, though not the sole culprit, depressed the (general) level of employment and the pace of employment creation". (IBRD Selected Dev. Issues 1982).

15. Further problems exist with wages policy in both intra-sector and inter-sector contexts. Rural minima are above the incomes that can be earned in both rural subsistence production and cash cropping. Also important however, is the gap between rural and urban minima. Table 3 details the relationships between rural and urban minima since 1972. Of most importance is the ratio between the two minima: urban minima are some 2-3 times the level of rural minima for unskilled workers, a difference that is very large by international standards.

TABLE 3:
RURAL AND URBAN MINIMUM WAGES-DEVELOPMENTS AND RELATIONSHIPS,
1972-81
(indices end-year 1972 = 100)

Year	Rural Minimum		Urban Minimum		Real Wage Indices			Urban (1) / primary industry wage	Urban (11) / primary industry wage
	Primary industry	Others	Level I	Level II	Primary industry	Level I	Level II		
1972	100.0	100.0	100.0/a		100.0	100.0	100.0/a	1.95	1.44/b
1973	100.0	120.0	113.5/a		87.5	105.0	99.3/a	2.34	1.64/b
1974	135.6	169.5	173.9	176.5	99.2	127.2	129.1	2.50	1.88
1975	150.8	182.2	224.3	224.7	99.4	147.9	161.3	2.90	2.45
1976	159.8	192.9	236.3	260.9	100.4	148.4	163.9	2.88	2.49
1977	173.4	194.2	247.5	274.0	103.0	147.0	162.7	2.78	2.28
1978	186.1	198.5	258.3	288.7	104.3	144.7	161.7	2.71	2.23
1979	198.8	202.2	269.2	303.4	103.2	139.7	157.4	2.64	2.20
1980	220.3		303.0	346.2	102.4	140.8	160.9	2.68	2.26
Mar 81	233.1		320.3	366.1	106.1	145.7	166.7	2.68	2.26

/a 1972 and 1973 data are the mid-point in the minimum wage range observed six Level II centres. The range was K 6-11 per week in 1972 and K6-13.30 in 1973.

/b Mid-point of minimum wage in six level II centres compared to minimum in primary industries.

Source: NSO, Jackson report.

The gap was primarily a result of the use of two different criteria for the determination of increases, namely: the "capacity to pay" of primary industries but the "basic needs" of urban workers. The "basic needs" criteria risks separating the minimum wage from the economic reality of PNG, whilst the 'capacity to pay' risks misjudging the secular trends in commodity prices and hence what the plantation sector can afford to pay and yet not impair investment. The consequences of such a separation are a rise in the urban-rural minimum income differential and lower total employment (and lower agricultural rural employment), as well as higher migration to urban areas.

16. Since 1976 Government policy on wages, as expressed in submissions to the Minimum Wages Boards, has argued that the previous bases for wage level determination be dropped, and restraint should be encouraged to allow for the growth of income-earning opportunities and to allow the Government (by cutting its real wage bill) to increase the share of development spending, especially on agriculture. So far this has resulted in the achievement of a slight decline in real urban wages since 1976 and a slight increase in real wages in rural areas, narrowing the

gap by some 20%. The overall situation with respect to wages and wage costs for PNG, however, remains one of high absolute levels of wages, great differentials between sectoral minima and sectoral averages, and marked differences in income opportunities with the agricultural sector. In the early and mid 1970's there was considerable concern about urban drift, the lack of wage opportunities for those coming to towns and the loss of manpower in the villages. Evidence available for the second half of the 1970's suggests a decline in rural-urban migration. To the extent that wages policy has contributed to this it has been successful. To the extent that it is the reduced probability of finding work in the face of absolute and relative increases in the supply of labour which has caused declines in migration, wages policy has been ineffectual.

As is noted later, (34), informal wage arrangements are becoming more common with rates of about 50% of legislated minima.

Fiscal and Monetary Policies:

18. Government fiscal policy since Independence has been aimed at a steady trend in real expenditure growth (within the context of fluctuating revenues from mining and primary industry sources), and fiscal restraint has been the most important instrument through which external balance has been sought. Macroeconomic projections used at the time of the formulation of the first NPEP in 1978 suggested that a steady rate of increase in expenditure of some 3% was consistent with the maintenance of a sound external payments position and with a level of public debt which would not introduce 'unmanageable' future budgetary problems.

19. The general picture has been of small per annum real growth since Independence in Government expenditure, at steady rates except for 1980 (with over-allowance for anticipated inflation rates) and 1982 (with mid-year savings being made in view of the previous year's events). In 1982, lower inflation rates than expected meant that instead of real expenditure falling as was planned, it probably remained static.

TABLE 4 : Government Expenditure, 1975-76 To 1982

Year	Expenditure (K million, current prices)	% Increase in Goods and services expenditure (constant terms)
1975-6	374.0	
1976-7	391.7	
1978	441.7	3
1979	486.0	3
1980	575.1	7
1981	609.7	1
1982(9)	636.4	3
1982(6)	615.2	0

(a) Original budget estimate

(b) Based on second quarter review

Source: Department of Finance.

20. The growth in public expenditure between Independence and 1982 was financed mainly by increases in non-mining internal revenue, offsetting the large reductions in Australian aid. This required substantial increases in the proportion of Papua New Guinean incomes being paid as direct or indirect taxes. This may have had some dampening effect on private consumption and investment. The external situation went into imbalance in the early 1980's with falling commodity prices (and hence depressed terms of trade), reduction in the real value of Australian aid and high international interest rates on increasing amounts of foreign debt, necessitating reductions in expenditure of some K100m to restore balance within 2 years.

21. Within the framework of fiscal policy as a whole particular taxes impact on import-competing and export undertakings. The 'ad valorem' export taxes, high taxes on fuel (therefore increasing already high transport costs) and power and the general import duty all affect incremental agricultural development and may be significant impediments to production for export. As regards direct tax policy to help agriculture and promote investment on the other hand, PNG offers few standard financial incentives. The principal ones are: (a) accelerated depreciation, whereby 20% of the capital cost may be deducted in the initial year, rather than in the terminal years, in addition to the normal initial year allowance; (b) a 200% tax deduction for wages paid to apprentices, available to all firms; (c) provision of infrastructure in return for payment of negotiated user charges; (d) a contribution of 50%, up to K100,000, to approved investor feasibility studies in qualifying industries; (e) free expatriation of profits; and (f) writing forward of losses for seven years. The limited nature of foreign investment incentives reflects Government's desire to limit subsidization of

foreign involvement in agriculture and to encourage national participation and as such does not represent a 'growth first' package.

22. The aim of monetary policy has been to influence the broad money supply to ensure the availability of sufficient credit to finance economic activities consistent with maintaining a sustainable balance of payments position and suppressing domestic inflationary pressures. In the period from Independence to 1980 monetary policy is best described as passive, with Bank of PNG directives to the commercial banks doing little more than anticipating the market. In 1980 a policy of low and stable growth of the money supply was articulated, but this was virtually abandoned later in the year with the deterioration of external conditions (falling commodity prices, high petroleum import costs etc), and the Government adopted a tight money policy with higher interest rates and the announcement of targets for changes in the money supply. However, these targets proved impossible to enforce in a small, open economy like PNG where large variations in the balance of payments through drastic changes in commodity prices and, hence, export receipts, caused variations in the balance of payments position and therefore the money supply. It is probably the case that the announcement of targets by the Government which could not be met in such circumstances increased business uncertainty and marginally destabilised economic activity.

23. With respect to monetary policy and money supply the role of the stabilisation funds for the major export commodities are potentially highly important. The current balances of the stabilisation funds (coffee K85 million, copra K20 million, cocoa K43 million) represent a high proportion of total liquidity within PNG - around 20% in fact at present. In view of the depositing of at least part these with commercial banks, the potential effect on total money supply and credit availability is substantial.

In general terms, therefore, monetary policy as a macroeconomic total has probably not impacted on the agricultural sector in any particular way, other than through the effects of interest rate changes on the supply and cost of credit, as has been the case in any other sector of the economy. Rather, the agricultural sector as manifested through changing volumes, prices and values of commodity outputs and stabilisation fund balances has affected the macroeconomic variable of money supply.

Several points need to be made, however: firstly, the conservative non-agricultural nature and Australian operating style of the trading banks has so far not led to any innovations for rural borrowers. The problems of literacy and bank-customer communications led to apprehension on the part of many rural people (stories of lost pass books abound) and a lack of mobilisation of savings.

Secondly, there is a need to develop a clear set of policies on

rural lending covering large and small borrowers. Recent events and new institutions, interest rate subsidies and different demand levels for credit (small for large amounts, large for small amounts) point to a need for consistent policy.

Thirdly, rapid build ups in stabilisation funds after years of depressed prices (eg in copra) is destabilising in terms of company profits and investment decisions.

Effects of Macroeconomic Policy on Agriculture

24. The main elements of historical macroeconomic policy have been described and the way in which they can affect the agricultural sector outlined. It is now necessary to consider the evidence of recent years to see the context and implications of macroeconomic policy for the agricultural sector, and from this to understand what the future issues for the impact of macroeconomic policy on agricultural development are, and to see what further options exist for macro policy.

25. The first point to make is that very little data exists which specifically ties macroeconomic policy to agricultural sector performance and development. We noted earlier the lack of policies with which to connect macro and micro policies and through which to measure impact. Even where some historical evidence does exist it is still impossible to compare this with what might have been (e.g, what would have happened to the agricultural sector at different exchange rates, wage levels etc.)

26. With respect to the 'hard currency' policy, the major review of the effects of the macroeconomic strategy on performance of the economy to date (Garnaut and Baxter) essentially concludes that the effects have been both favourable and beneficial to growth within the agricultural sector. The 'hard kina' strategy is supposed to have operated successfully, creating a climate of stability and in which growth was possible:

"overall, we have found no evidence that the hard currency strategy was an impediment to growth". (Garnaut and Baxter)

Specifically with respect to the potential profitability of export and import-competing industries, it is argued that the two five percent and one four percent discrete revaluations of the kina since 1976 have lowered tradeables' (i.e. imported goods) prices relative to costs by an average of one to one and a half per cent over the whole period since monetary independence.

(This is because of the mechanism by, and extent to which lower prices of imports expressed in kina are passed into domestic costs and prices). The implication of this is of course that competing local industries and producers have been 'squeezed' to the same extent, making profitability and therefore survival more difficult. However, this is argued to be a small effect and should be balanced against the longer-run benefits of economic stability which acts as an incentive to invest in import-competing and export production. Thus :

"even in the depths of the present recession (1983) continued investment in large-scale agriculture and forestry places Papua New Guinea in a stronger position than all but a few primary-exporting developing countries". (Garnaut and Baxter)

Of course, Garnaut and Baxter accept that exporters' incomes were reduced in kina terms, at each kina revaluation. Whilst this is undoubtedly true, they say the effects, especially for village-level producers, have been greatly overstated and are generally offset by the absence of the "inflation tax" following the kina appreciation. The argument is therefore that although kina appreciations reduce actual domestic receipts, less tax is paid by exporters and that if the cash, stabilisation fund balance and other financial assets of a village household represent on average one half of the value of a year's earnings from cash crop estimates, the benefits from the reduction of the "inflation tax" would at least partly offset the real income loss to the household from the kina appreciation.

27. As regards the agricultural sector, therefore, whilst it is recognised that the 'hard currency' policy may not be geared to a straight agriculture-growth aim, the problems it causes export and import-competing industries are argued to be very minor compared to the structural and administrative environment in which they function, and the policy itself has not been an impediment to growth. Table 5 shows PNG in relation to its major trading partners and some comparable countries with an index based on domestic price levels and exchange rate changes (against the US dollar). PNG'S inflation rate has been (at 51%) lower over the period and its currency stronger (appreciating 8% against the dollar) than average.

Table 5: Indexes of Consumer Prices, Exchange Value of Currency (United States \$ per currency unit) and Competitiveness 1975-1982, various countries (June 1982 values, December 1975 =100)

Country	Consumer Prices	Currency Value	Price level compared with Papua New Guinea after taking account of exchange rate changes
Papua New Guinea	151	108	100
Southwest Pacific:			
Australia	188	81	94
Fiji	179	92	101
New Zealand	251	71	110
Solomon Islands	202	74	92
Vanuatu	185	77	88
Asia:			
India	148	94	86
Indonesia	236	63	91
Japan	143	120	106
Malaysia	143	110	97
Philippines	212	89	116
Singapore	134	116	96
South Korea	268	65	107
Thailand	186	89	102
North America and Europe:			
Canada	183	79	89
United States	175	100	107
France	209	66	85
West Germany	134	107	88
Italy	288	49	88
Spain	286	54	95
United Kingdom	222	86	118
Africa:			
Botswana	216	79	105
Ghana	3,071	42	793
Ivory Coast	247	66	100
Kenya	262	92	149
Nigeria	232	75	107
South Africa	221	76	103
Tanzania	278	88	151
Zaire	2,048	9	107
Zambia	248	69	105
Latin America and Caribbean:			
Argentina	50,857	0	121
Brazil	2,634	5	74
Chile	1,253	20	152
Guyana	241	85	126
Jamaica	309	51	97
Peru	1,919	7	78
Trinidad & Tobago	223	106	146

Sources: International Monetary Fund.

In the first few years of the period shown (1975-79) PNG's inflation was so low as to more than offset the appreciation of the kina: after 1979 this gain in "competitiveness" was lost as inflation increased and present average real costs are around parity with 1975 levels. Labour costs (the main component of local costs) and other costs rose at virtually the same rates. Thus over the period since monetary independence it is argued that the 'hard kina' policy has been essentially 'neutral' in its effects on the relative cost position of exporters and import-competitors. This of course does not imply that PNG's cost level relative to the rest of the world at 1975 was appropriate: only that the present position is basically unchanged from then. The question therefore arises for agricultural producers as to whether or not the present cost levels are appropriate in the world situation in which PNG must operate.

28. Some original architects of the 'hard kina' strategy now feel that in present world and internal conditions an increase in the price of tradable goods relative to labour of around 30% is called for. This can either be achieved through a once-and-for-all devaluation or by letting the domestic price of tradeables rise in line with international inflation (i.e. avoiding a discrete devaluation and maintaining external parity by not revaluing). For the agricultural sector the implications are that a devaluation would improve the profitability of operations immediately, restoring prices more favourable to expansion. (Although for an operation like Ramu Sugar however, with large foreign debts and earnings entirely domestically generated the position would be reversed). In this sense a devaluation would represent a transfer from wage earners to exporters - both large and small scale. This effect would be mitigated through increases in the collection of export tax. A gradual approach implies a more slow reduction of real labour costs but probably less of a dislocation of business confidence. With either approach the felt need is to reduce real labour costs within PNG agriculture (and other sectors) to increase competitiveness and increase total employment. This point has been made both the two recent major reports dealing with the issue by Garnaut and Baxter (1983) and Dudley Jackson (1981).

29. Management of the exchange rate in PNG's circumstances is of course only part of the problem. Any devaluation of the currency can only be successful in reducing real labour costs to the extent that increases in the prices of tradables (imported goods) do not translate into equal increases in money wages. Thus a prerequisite for such a strategy is that Government and Minimum Wages Board abandon a policy of full wage indexation.

30. The issues for the agricultural sector of such a policy on the value of the money and real wage levels therefore turn on to what extent the improvements in competitiveness of exporting and import-competing operations and the decrease in real labour costs themselves would create jobs. Evidence and data on such issues are slight. There is little doubt, though, that falling real

wage costs could greatly benefit patterns of expenditure, especially within the public sector. Government expenditure on capital items has been low as a proportion of total expenditure, even by third world standards (being around 12% in 1977 and 20% in 1980 compared to 26% for an average of 62 third world countries). Because public sector pay rates 'spill over' into the private formal sector PNG is spending a high proportion of its gross domestic product on final consumption expenditure (some 26% of GDP compared to a world average of around 16% in 1978 for example). Accordingly there is a need to:

"to raise the proportion of capital expenditure" and

"as much as possible of the budgetary freedom created by falling real labour costs.....should be applied to the expansion of productive investment, especially in agriculture" (Garnaut and Baxter).

Thus a reduction in real wage costs immediately could free resources for expenditure on agricultural development, especially within the public sector but also within the private agricultural sector.

31. Whether of course private industry would create more jobs depends not just upon relative international competitiveness but upon overall profitability, and this is obviously a function of both the average cost of labour and other inputs, and average prices received for the product. Little empirical work has been done on this issue but data from the 1970's suggest that employment levels in agriculture do respond significantly to changes in wages and product prices. If a 'product wage' is defined (which is average annual earnings in agriculture, and in agriculture this very closely follows minimum wage level settings, deflated by an export price index, excluding copper concentrate) the relationship between changes in the product wage and wage employment in rural industries throughout the period can be seen below:

Table 6 : Relationship Between the 'Product Wage' and Employment in Rural Industries.

	% Change Over Previous Year	
	"Product Wage"	PNG Employees in Rural Industries
1971	29.7	- 7.7
1972	22.2	- 1.4
1973	1.3	- 2.7
1974	- 31.9	- 0.9
1975	26.5	- 5.9
1976	42.3	- 14.8
1977	- 43.0	3.8
1978	3.2	14.5

Obviously this table only presents data for a short period but it does seem that changes in employment can correspond inversely with changes in the product wage and therefore the costs of labour. Jackson argues strongly that a definite causal relationship exists:

" in 1971 the product wage rose sharply by 29.7 per cent due to a large rise in average earnings combined with a small fall in product prices. In the year following product prices fell more steeply (by 16.4 per cent) and the product wage continued to rise rapidly. This obviously contributed to the the quite large reductions in employment in these and the following years (the process of adjustment is very likely to be lagged). However, in 1974 when average earnings again increased this was more than offset by the very large rise in product prices and there was a consequent fall in the product wage: the result was that employment was not reduced. But in 1976 when increases in average earnings were again combined with falling product prices, the steep rise in the product wage during that year (42.3 per cent) led to the largest-ever decline in employment (14.8 per cent). The following year a steep rise in product prices caused the product wage to fall by 43 per cent and consequently (and despite increases in average earnings) employment rose in 1977 and 1978."

32. The implications for agriculture in the medium term therefore are that total employment could be increased over levels that would otherwise obtain at projected commodity prices by reducing real wages (and hence the 'product wage'.) Obviously such a policy is in line with declared aims of increasing productive employment and would help reduce the existing degree of inequality which exists within agriculture between those with wage opportunities and those currently without. On these grounds, plus the need to determine whether 'product wage' rates are at such a level as to curtail investment in the long-run in the plantation sector, it would seem essential to at least develop a monitoring and processing system for these variables within the agricultural sector for wage-fixing agreements.

33. As well as changes in the volumes of employment at particular wage levels there is also the consideration of increasing capital intensity within the plantation sector as a result of too high costs of labour. Very little actual data exists, beyond general observations, although the World Bank in its 1982 country report concluded that

"high wages appear to have already resulted in reduced labor usage per unit of output in the major tree crop industries. Labor-saving devices and management methods are being increasingly adopted, and in some industries there is scope for considerably more such substitution. Given further increases in wages, it is therefore likely that the contribution which these industries make to employment will be reduced, even if they remain commercially viable."

The search for labour-saving devices (if not well documented at present) appears to be occurring at all stages of production (insecticides, herbicides, processing methods etc) on plantations facilitated by the relative cheapness of the (imported) technology. As an example, data collected by NSO in the course of annual plantation surveys suggest increasing substitutions of capital for labour. Figure 1, overleaf, presents data for a sample of coffee plantations for the years 1964 to 1980 as regards the level of employment per hectare of citizen workers and the amount (in 1970 constant terms) spent per hectare on chemicals. The trends in these two variables are immediately apparent. Whilst this data is only preliminary and for a small sample size (those plantations who completed forms for the whole period) it is likely that the trends could be even more pronounced in the copra and cocoa industries where technical possibilities for labour substitution are if anything greater. Further, the adoption of labour saving technology on largeholdings has had some spillover effect on smallholdings, particularly for weed and grass control. However, the arguments about increasing capital intensity must be regarded as conjectural at present in the face of the lack of empirical demonstrations of causal relationships between variables. Also, of course, increasing capital intensity in itself is not a bad thing, and is usually taken to be an indicator of economic development. The point is that the productivity of labour is thereby increased and that 'freed' labour moves into other activities. In PNG's case, whilst some evidence exists to suggest the former trend, (see Fig 2 from the same NSO plantation data none exists to suggest the latter.

34. With respect to wages policy alone (i.e. independent of exchange rate mechanisms) within the economy, issues of equity and efficiency arise for the agricultural sector, essentially because of the setting of wage levels above what can be earned by other producers of food (subsistence) or cash crops. The ILO 'Report on Wage Policies in Papua New Guinea' in 1979 estimated that the rural minimum wage earner in primary industries was getting about 1.6 times the subsistence income in 1971 and about

LABOUR USAGE ON COFFEE PLANTATIONS

(1964-1980, CITIZEN WORKERS PER HECTARE)

WORKERS PER HECTARE

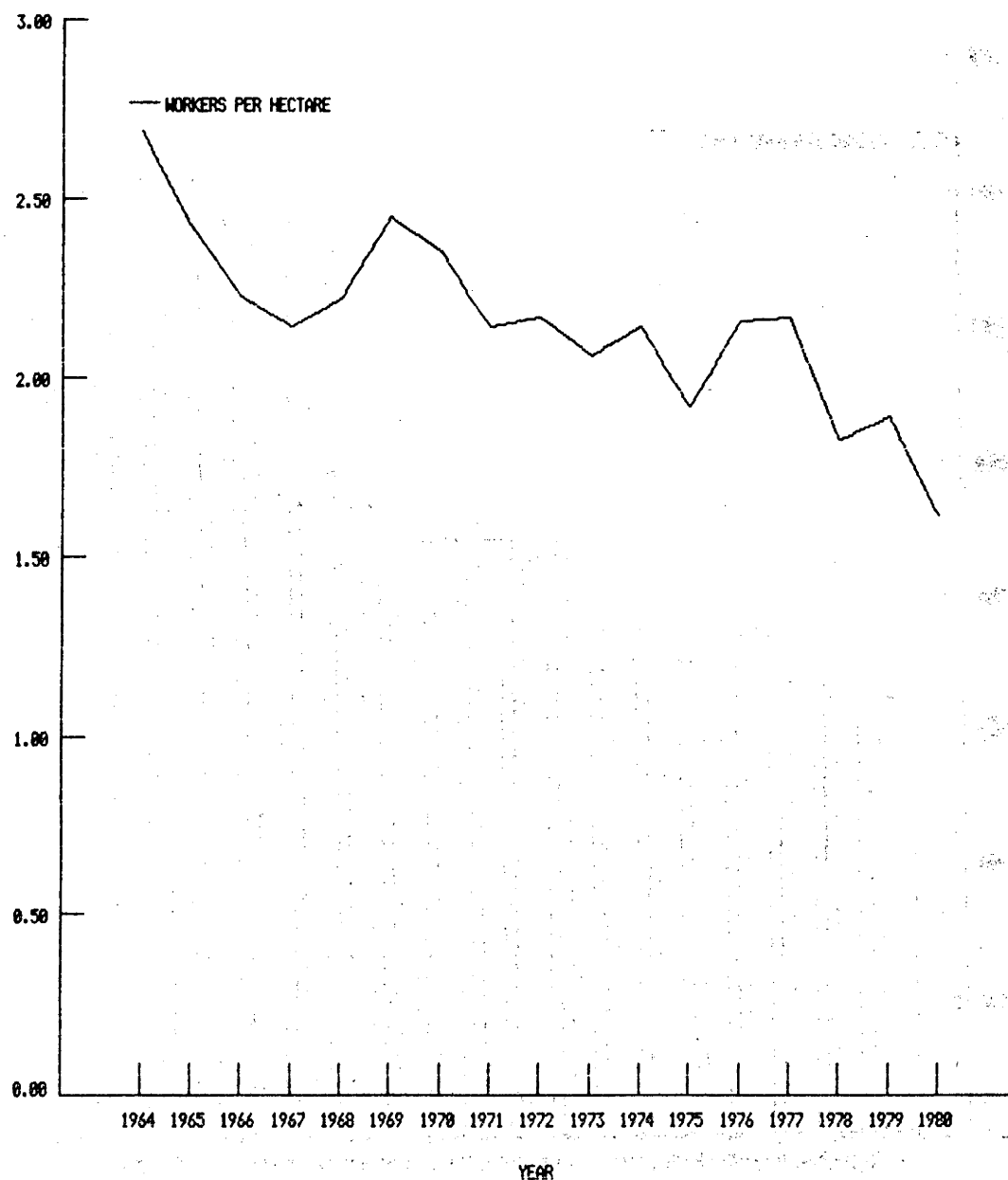


FIGURE 1.

OUTPUT GREEN BEAN PER WORKER - COFFEE

NSO data 1964-80 (n = 24)

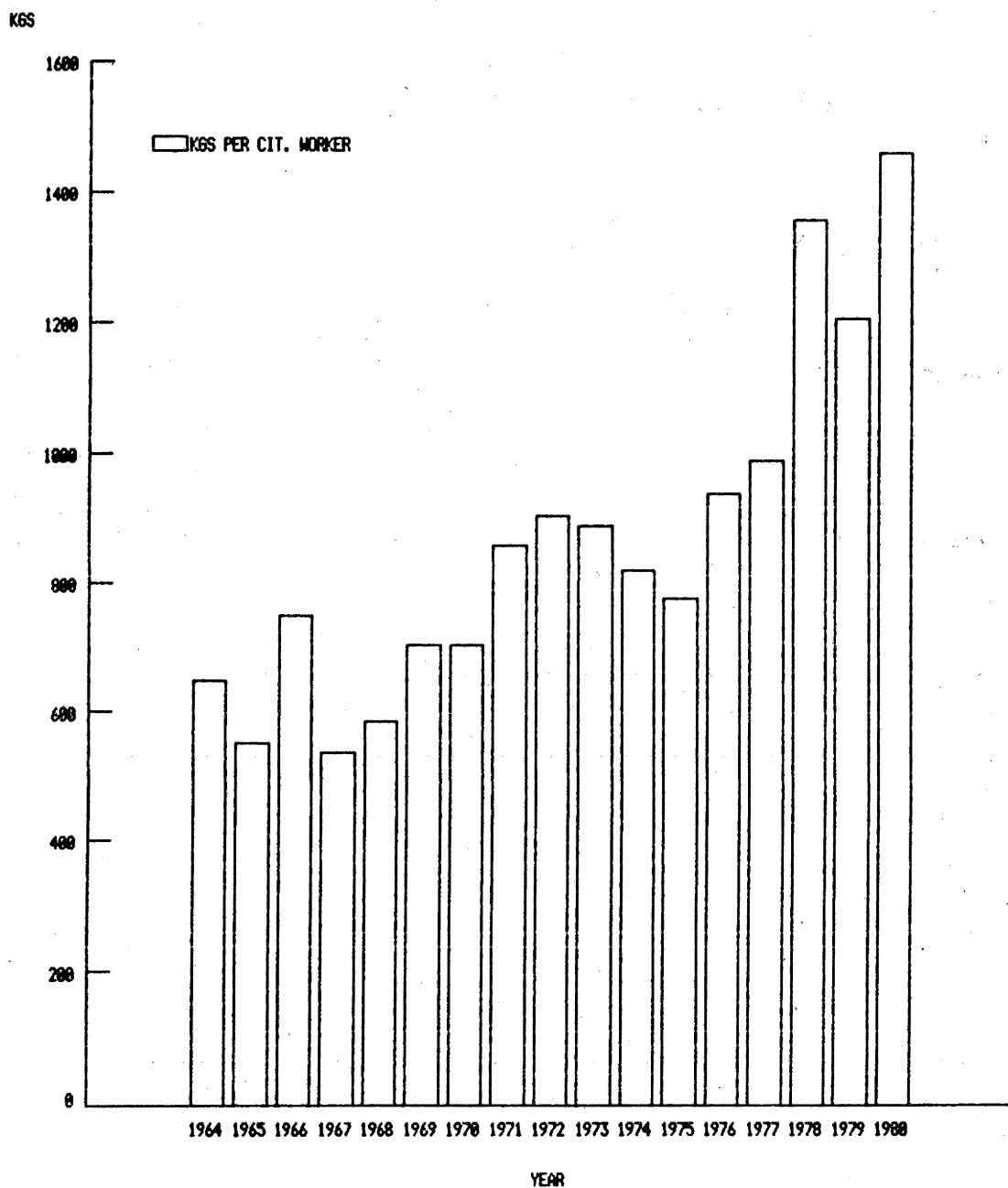


FIGURE 2.

2.6 times the subsistence income in 1976. This difference is greater than would apply to cash crop producers but the point still applies that some agricultural workers have a degree of protection whilst the majority (over 90%) are dependent for the bulk of their cash income on commodity prices over which neither they nor the Government have much control. The extent of inequality is very hard to define because of the need to impute values of food produced by subsistence producers as well as the cost of such food to wage earners, but attempts have been made to compare incomes. In the late 1979's when rural minimum wages were K1.95 per day returns to smallholder coffee growers in the Southern Highlands at the time of the establishment of the SHRDP were estimated at K1.04 per day, or some 55% of the minimum wage rate (and slightly less of average rural earnings.) An estimate made in 1982 by DPI in a submission to the Minimum Wages Board, when the minimum rural wage was K14.65 per week, estimated total income to rural villages in non-wage employment to be K9.3, or 64% of the minimum rural wage rate. Very rough estimates of relative returns at present are presented below in table 7, for returns to cash crop producers in typical areas and minimum rural wage earners. Obviously apparent is the differential between wage earners and cash crop producers at current wage rates, with cash crop households' cash incomes being around 40-95% of those household earning rural minimum wages.

Table 7: Possible Current (1983) Return to Cash Crop Producers and Minimum Rural Wage Earners

Occupation	Income
Minimum Rural Wage Earner (unskilled)	K812.5 per year, or K 16.25 per week (1984)
Coffee Producer (EHP)	K378 per household pa, or K 3.63 per adult unit per week
Cocoa Producer (NSP)	K786 per household pa, or K 7.55 per adult unit per week
Copra Producer(ENB)	K410 per household pa, or K3.94 per adult unit per week.

Source: DPI Commodity Summaries and Department of Labour. (Assumes two adult units per household.)

The overall situation in this respect in the agricultural sector is therefore that returns to wage earners are relatively high. The total availability of employment opportunities is constrained by the high cost of employing labour and only a small proportion of the rural workforce can find formal sector jobs, with the result being a relatively higher degree of inequality of income distribution than need be the case. There would seem to be a great need to expand formal employment opportunities even at what

seem like low rates of pay. As Jackson pointed out, it is "better for workers to be employed and exploited than unemployed and unexploited". The situation in practice in fact bears Jackson out: in EHP coffee labourers are commonly employed permanently or casually by villagers. Rates of pay can be as low as K10 per fortnight, but are usually around 50% of the minimum wage. Payment can also be made at least in part in kind, further reducing cash payments. If it is not politically feasible within existing arrangements to cut the level of rural wages other productivity-linked options need to be investigated.

35. As well as differences in returns within the agricultural sector great differences in returns between urban and rural sectors exist within PNG. The nominal gaps have been described above in table 3. Obviously these gaps have to be reduced both by the costs of living in urban areas as well as the lower probability of finding employment at all. However, a real urban-rural income differential does exist within PNG, and has contributed to migration from rural to urban areas. In the mid-70's this migration was of the order of 7% pa and is currently around 4% (into the NCD, preliminary estimate from the 1980 Census). The actual effect of such movements on agricultural production are extremely hard to estimate. Because migrants are typically young males this has a significant effect on village life, but actual instances of falls in the production of food or cash crops are not documented. Whilst anecdotal evidence exists (such as reports of the plantings of yams in East Sepik dropping greatly, (Wheeler 1978) it is probably best to regard the oversupply of labour in urban areas as a potential gain to the agricultural sector if these resources could be used in agricultural production. The urban-rural income differential as a result of wage legislation thus operates to the disadvantage of the agricultural sector in two senses: it causes a loss of resources to the agricultural sector as manifest through migration and, because of the Government's high wage and salary bill, restricts the amount of resources for expenditure on productive agricultural development.

36. The Governments' overall fiscal and monetary stances since Independence have had less effect on the development of the agricultural sector than the other components of policy already discussed. Although several issues have been mentioned earlier (23) other issues for agriculture within the context of present policy do arise. One major issue has been the structure of taxation as it applies to exporting and import-competing agricultural industries. In particular, the concentration of the tax burden on such items as fuel taxes has greatly affected the primary sector, which often face high transport costs in reaching the whole PNG market from only a few producing locations. This situation has been abated to some extent by the dropping of taxation on fuel used for water transport (where no user charge can be said to apply) but further scope in this area exists. Also the question of rebating taxes on fuels used in private electricity generation for production needs to be addressed. Arrangements for the grouping and removal of double taxation have

already been mentioned in MTDS discussions. Another major impact on incentives to production for export and import replacement is often held to be the imposition of general import levies. It has been recommended that a system of drawbacks for all import duties, including the general import duty, on materials used as inputs into manufacturing or processing for export. Whilst such a scheme has inherent attractions it should only be operated in conjunction with policies to reduce real wage costs if increasing capital substitution for labour is to be avoided. On the other side of fiscal policy, that of providing incentives for investment, policy at present is not over positive. The incentives to investors mentioned above in themselves do not promote a growth-first strategy because of the context of the 'Eight Aims' and the emphasis on redistribution and self-reliance. There is arguably a need to review such a strategy in the face of relative stagnation in the agricultural sector, and to encourage the use of foreign capital and expertise, in order to put the agricultural sector onto a higher growth path. Possibilities exist with the establishment of nuclear estates or areas of high concentrations of smallholders where private owners do or could supply services to surrounding smallholders. The problems are further compounded at present by the poor administration of investment proposals. Current levels of export taxes appear fairly uncontentious.

37. Criticism, in the context of monetary and money supply problems, has also been made of current policies towards smallholder lending. The World Bank has suggested (Selected Development Issues, 1982) use of funds from export levies for smallholder lending, and there is a definite need to extend credit facilities to rural producers. However, this is really a problem of mobilisation of funds rather than of changes in supply management (see 23). The operations of the commodity stabilisation funds are generally held to have been successful in stabilising smallholder and other incomes in the face of commodity price movements. Because these funds can potentially represent such a relatively large proportion of total liquidity the issue arises as to what proportion of their balances should be held at the central bank in order to contain credit creation. Whilst on average some 60% of funds have been held at the Central Bank and 40% at commercial banks, it is arguable that as close as possible to 100% should be held on deposit at the central bank, with compensations and explicit subsidies paid if interest rates paid are below commercially obtainable rates. This would give Government greater formal control over the total monetary supply.

Issues for the Medium Term

38. This paper has so far described the major elements of policy making at a macroeconomic level which have existed in PNG since Independence. It has tried to assess what impact these policies have had on the agricultural sector. It must essentially be concluded that:

- the 'hard kina' strategy has provided a climate of overall stability for PNG, for a potentially difficult period after Independence. Little actual evidence exists to demonstrate that the policy has substantially mitigated against the development and establishment of import-competing and exporting industries, although this general tendency is hard to deny. Similarly, however, little evidence exists to show that the stability of the economy as a whole as a result of the policy has been successful as an inducer of growth and investment.

- wages policy has created a situation where overall tendencies are to discourage the use of labour where possible in the agricultural sector, and where earnings opportunities in the formal agricultural sector and the urban sector can greatly exceed those in the (majority) informal agricultural sector. Again, little evidence exists to demonstrate the seriousness and extent of these trends, but they undoubtedly do not facilitate the desired aims of stated policy in terms of generating employment in agriculture.

- fiscal and monetary policy have been essentially neutral and passive, on balance, as regards their effects on agriculture.

39. Overall, therefore, macroeconomic policy has afforded a climate of stability primarily, but has not promoted development and growth in the agricultural sector. Macroeconomic policy has arguably been defined in very conservative and passive terms; terms perhaps more suited to developed countries rather than to an economy whose main need is to raise general levels of welfare and extend the degree of participation in the cash economy. Whilst such policies may have been appropriate in the period immediately following Independence, at present it would be possible to regard PNG's economy, and in particular its agricultural sector, as ossified: very stable by third world standards, but also not going anywhere as regards structural change and development. The 'stability' which has been generated by policy may even prove to be ultimately destabilising in itself, if measures are not actively taken to promote agricultural development and the extension of economic opportunities to a rapidly expanding population.

40. Scope therefore exists in the medium term for the definition of macroeconomic policy in more active and wider terms. Possibilities exist within the parameters of current policies as well as with the introduction of new ones. Within the context of existing policies, even the original designers of the

'hard kina' strategy now feel that a devaluation of around 25% is called for. This would undoubtedly give a boost to agriculture in the short term. Taken together with a firmer wages policy, PNG's international competitiveness would also be improved and differentials within the agricultural sector and between sectors reduced, with favourable consequences for both the total level of employment and the proportion of employment in the agricultural sector. These are obvious measures within the context of historical policy: but even if they were taken it is unlikely that growth and development would occur in the absence of supplementary policies. Lower exchange rates (and thus higher kina export earnings) will not call forth long run increases in agricultural activity because of other constraints (infrastructural, managerial etc.), and lower real wages may not increase employment in the agricultural sector as present opportunities widely exist in the informal sector for employment at less than official minimum wages, although plantation employment levels on average should rise, especially if payments can be related to productivity. There is also far more potential for smallholder lending policies than has hitherto be realised. Funds are available both from the export levies and within stabilisation fund balances which represent a potential source of credit (defined and managed in various ways) were policy more active.

41. It is therefore suggested that whilst the above measures in themselves may be desirable, and indeed set the framework for change, other policies should be taken in conjunction to actively promote development: these essentially involve the design of a more aggressive fiscal and monetary stance and a much more active role for Government in the identification, design and implementation agricultural projects for large and small scale development.

42. It is arguable that not enough has been done in PNG to overcome the infrastructural constraints which hinder agricultural development, and that a large measure of policy should be directed at the building of roads, marketing and storage facilities etc., to provide the infrastructure which is precondition for change in many areas. Most of this investment would go into areas which are presently less developed. This would necessitate overseas and domestic borrowing (and hence the abandonment of balance in the short term), to be repaid from future (and higher) income streams. International agencies are currently only too willing to lend for this sort of purpose: PNG should not be too conservative in taking advantage of this. Obviously projects of this nature need to be thoroughly appraised, and in particular attention needs to be given to the dynamics of economic change in the long run resulting from improved road access/marketing facilities etc. It is possible that these types of benefits have been understated in the past. PNG's infrastructural problems are enormous: however the economic problems resulting from small market sizes, high transport costs etc. will not be begun to be resolved until these problems are addressed.

43. Another major area for policy, again requiring a far more active fiscal and monetary stance because of the need for borrowing, is in the identification and participation by Government in large-scale agricultural projects, perhaps on joint venture bases. There is a great need to expand the range of investment opportunities in the agricultural sector: whilst the government has a good track record in this respect, the scale of its involvement has been very small. A much larger number of successful projects along the lines of Hoskins and Higaturu need to be identified and implemented. Scope exists for the establishment of these in conjunction with major infrastructural innovations. The World Bank in particular has suggested the benefits from joint venture/nucleus estate type developments, where overseas capital is allowed to invest, yet benefits from plantation/processing facilities also accrue to local smallholders. The conservatism shown to date towards foreign capital in the face of the desire for local participation needs to be revised if the desired level of growth is to be achieved. Greater and more tangible incentives (other than general stability) need to be provided to overseas investors, and Government needs to be prepared to borrow to participate as and when necessary. Appendix 'A' shows a list of 31 currently identified major agricultural development projects which provide a starting point for investment opportunities in the light of the preceeding comments. However, there is no use even thinking in these terms unless sufficient manpower and financial resources are applied to the task. Public sector cutbacks and planned agricultural growth are incompatible.

44. The participation by the public sector at a greater level in project identification and design as well as implementation presupposes two essential preconditions: firstly is the need to make a serious attempt to resolve lands issues and secondly is the need to strengthen the public sector ability to identify and propose projects, rather than simply responding to proposals from other sources. The last project prepared by DPI for overseas funding was Higaturu, over 10 years ago. The lands issue has proved a major constraint to development in the past in many cases, and it is time the issue were addressed as a major component of a macro level policy. The establishment of a within public sector capacity for project identification can be more easily undertaken, perhaps with the setting up of a Land Development Division to rapidly identify and scrutinise areas of major agricultural potential. This is an accepted model not only in most Commonwealth developing countries, in all ex-Dutch colonies and the USA, UK, Australia, New Zealand and elsewhere. It is a logical and very fundable component to go into a MTDP.

45. Agricultural research services, which provide the technology for new growth, are presently in the early stages of being rebuilt after many years of decline. It is critical that they are adequately financed, staffed and focussed on small and large scale systems.

46. The points made about staple foods (para 12) need special attention. Larger scale production and marketing close to urban centres is part of the solution but adequate resources and manpower must be applied if traditional foods are to remain as staples.

APPENDIX 1.

MAJOR AGRICULTURAL DEVELOPMENT PROJECT PIPELINE (Draft #5, Dec. 1984)

Please provide comments/modifications to Chief Agricultural Economist,
Economics Section, PPC Branch, DPI, P.O. Box 417, KOROBOU (214695233)

PROJECT DESCRIPTION								STATUS OF INVESTIGATION			FINANCIAL ARRANGEMENTS				COMMENTS
NAME	PROV.	ACTIVITIES	AREA(Ha)	LAND OWNERSHIP	AREA POP.	EMPLOYMENT CREATION	NUMBERS OF SM/HOLDERS	LAND SUITABILITY	PRE-FEASIBILITY	FEASIBILITY	COST EST. (K'000)	EQUITY: LOAN	GOVERNMENT INVESTMENT		
SCHEDULE A. Project preparation work either completed or not requiring further Gov't involvement:															
1) Milne Bay Palm Oil	M.B.	Oil Pala + Cocoa	5370	Gov't+Priv. Leasehold, Customary	3610	1000	400-500	Completed-DPI, 1983	Completed-CDC, 1983	Completed-CDC, 1984	58200	40:60	50%	Negotiations with CDC expected in early 1985.	
2) Cape Rodney (S/holders)	Central	Rubber	5836	Gov't Leasehold	5258	Nil	1040	Partially Completed-DPI, 1984		Completed-ADB, 1983	22500-24000	N.A.	100%	Implementation underway (NPEP 241-3-721); land ownership disputed. Land suitability of Iaila-Lake under investigation.	
3) Cape Rodney Cocoa Estate	Central	Cocoa	2250	Customary, Gov't Leasehold	5258	1500	Nil	Completed-DPI, 1982	Completed-CDC, 1978	Completed-CDC, 1983	24000	?	50%	Progress being made on land acquisition. CDC to develop. (NPEP 241-3-722)	
4) Cape Rodney Rubber Estate	Central	Rubber+ Cocoa	3870	Gov't Leasehold	5258	1500	Nil	Completed-DPI, 1983	Completed-SIPEF, 1984		?	?	30%	SIPEF to prepare project documents in 1985. Gov't trying to lease additional 3000 ha.	
5) Mamba Estate	Oro	Cocoa+ Rubber?	3890	Priv. Leasehold, Customary	9000	600	530	Completed-FRD, 1983	Completed-FRD, 1983 CDC, 1984		12000		0%	HOPPL to purchase and develop. HOPPL/PNGDB negotiations underway.	
6) Kapuira	M.N.B.	Oil Pala	6000	Gov't Leasehold				Completed-DASF, 1975	Completed-Harrisens, 1983	Completed-Harrisens, 1984	37000		0-30%	Negotiations underway between Harrisens+Cross-fields and Gov't.	
7) Galley Reach	Central	Rubber	3300	Priv.+Gov't Leasehold		1000	Nil	Completed-DPI, 1983	Completed-CDC, 1981	Completed-SIPEF, 1982	10000		0%	SIPEF proceeding with land applications for Maraboi, Rubberlands + Lolarua Gov. properties. ACF/PNGDB negotiations underway.	
8) Sugu Gwinine	S.H.P.	Chincema/ Cardamom/ Coffee	3000	PNGDB Leasehold				Completed-	Completed-ACF, 1983	Under way-ACF, 1984	10000		0%		
9) Numundo/Saru	M.N.B.	Oil Pala	6000	Gov't+Priv. Leasehold				Completed-DPI, 1974	Scheduled-ADB, 1985		40000		0%	Estate development only; C.P.L. owned.	
SCHEDULE B. Recommended priority list of Project Studies to be undertaken:															
1) Collingwood Bay	Oro	Tiaber+ Oil Pala/ Cocoa	13000	Gov't Leasehold	3300			Under way-DPI	Scheduled-CDC, 1985		50000	40:60	30-50%	WB project preparation assistance possible 1985.	
2) Magarita/Masai	Central	Oil Pala/ Rubber/ Cocoa	1500+	Priv.+Gov't Leasehold							40000		30-50%	WB project preparation assistance possible 1985. Clarification of land ownership required.	
3) Village Oil Pala Extension	M.N.B.	Oil Pala	750	Customary			364	Completed-DPI, 1975	Completed-		1161		100%	ADB technical assistance possible 1985.	
4) Resettlement Scheme Rehab. and Extension	E.N.B.	Cocoa+ Coconut	6000	Gov't Leasehold			500-700	Marangei Sec. Completed-DPI, 1983	Scheduled-ADB, 1985				100%	ADB technical assistance possible 1985 for Marangei and other Gazelle sites.	
5) Savien Resettlement Extension	E.Sepik	Rubber	3000	Customary	2500	300	330		Completed-DEIA, 1976				100%	Land acquisition problem.	
6) Highlands Coffee Inds. Rehab.	Various	Coffee	50000	Customary	1.2a		0.3a	Under way					100%	Improving extension services (NPEP 241-3-720), additional funding required	
7) Islands Cocoa Inds. Rehab.	Various	Cocoa		Customary	0.4a								100%	Rehabilitating village cocoa. Past work in ENB needs to be reviewed.	
8) Consolidated Plantation Redev.	M.I.	Cocoa/ Coconut/ Rubber	6000	Priv. Leasehold			Nil	Completed-DPI, 1959	Completed-CDC, 1984	Scheduled-CDC, 1985	25000?		30%?	Current lessees interested in retaining some equity, CDC may examine in 1985.	
9) Plantation Rehab.	E.N.B.	Cocoa	4000	Gov't+Priv. Leasehold				Completed-DPI, Various			8500			30 derelict plantations identified for possible takeover.	
10) Bereina/Mekoe Rice Dev.	Central	Rice	3000 (200ha-trial)	Gov't Leasehold	8500			Completed-	Completed-					ADB technical assistance possible 1985. Design listed in 1985 but not funded.	
11) North Fly Development	Western	Rubber/ Oil Pala	30000	Customary	10000			Recon. Completed-DPI, 1979						ADB tech. assistance for detailed land capability possible in 1985.	
? Umboi Island Development	Merobe	Tiaber+ Oil Pala/ Cocoa	15000	Customary	8000			Completed-DPI, 1979						Log export proposal under consideration. Awaiting Prov. Gov't req. for ass't.	
? Gulf Rubber Rehab.	Gulf	Rubber	3000	Gov't+Priv. Leasehold, Customary				Completed-DPI, 1981						ADB tech. assistance possible. Awaiting Prov's advice on land availability	
? Bewani	M.Sepik	Rubber/ Cocoa	10000	Customary	1500									Land suitability work funded in 1985 NPEP.	
? Baiyer River	M.H.P.	Coffee/ Citrus	1200	Priv. Leasehold	10000			Completed-DPI, 1967						Baiyer R. Alcohol Co. in liquidation. NZ consultants to look at citrus in 1985.	
? Mahgi Swamp Reclamation	M.H.P.	Tea/ Spices	10000	Gov't Leasehold	30000			Completed-1972	Completed-1972					Studies done by Wilton&Bell. Need to identify partner interested in tea.	
? Diapu Live-stock Dev	Gulf	Cattle	4000	Customary				Recon. Completed-DPI	Under way-DPI, 1984					Awaiting pre-feasibility study from Livestock.	
? Garaina Tea Estate	Merobe	Tea+ Spices+ Coffee	300+	Gov't Leasehold, Customary	6000	130	300	Completed-NPMA, 1983	Completed-NPMA, 1983	Completed-Crown Ag, 1984	400		0%	Access problem; air only.	
? Usino Dev	Madang	Oil Pala	4000-6000	Customary										Long term prospect only.	
? Sogerua Valley	Madang	Oil Pala	4000-6000	Customary				Recon. Completed-						Long term prospect only.	
? Golgol Valley	Madang	Tiaber+ Cocoa/ Oil Pala		Customary	4900			Recon. Completed-DPI, 1972						Follow-up land use after timber extraction.	
? Bakada	M.N.B.	Cocoa/ Oil Pala	6000	Gov't Leasehold				Completed-DPI, 1969	Scheduled-ADB, 1985					No interested partner because of volcanic activity.	