

PEOPLE'S REPUBLIC OF MOZAMBIQUE
MINISTRY OF AGRICULTURE

A GENERAL OUTLINE
OF
AGRICULTURAL DEVELOPMENT IN MOZAMBIQUE

A DOCUMENT PREPARED FOR THE MEETING ON
AGRICULTURE IN SADCC - HARARE
JULY, 1986

1. THE AGRICULTURAL SECTOR IN MOZAMBIQUE.

1.1. Agriculture in the National Economy.

Agriculture constitutes the basic sector of the national economy and generated approximately 40% of the Gross Social Product (GSP), during the period 1977 - 1981. In 1984, agriculture accounted for 46% of the GSP due to the rapid decline in industrial production as well as in transport and trade. In terms of total exports of the country agricultural products (including forestry and fisheries) represented 78% in 1984. Agriculture is also the most important sector in regard to employment as it provides employment for approximately 84% of the total labour force.

1.2. Agricultural Resourcebase

Mozambique is indeed well endowed in terms of land and water resources for the development of agriculture (crops and livestock), forestry and fisheries.(Ref. Annex 1). The country has a total of 15 million ha of arable land, of which some 20%, i. e. 3 million ha, are areas with good irrigation potential.

Productive natural forest cover approximately 19.2 million ha, of which 25% are forest of medium to high productivity. ^{1/}

With a very rich and diversified wildlife, a vast network of lakes and rivers and a coastline of some 2 500 kilometres, the country also has an excellent potential for development of wildlife and fisheries.

In agro-ecological terms Mozambique has various regions which may be divided into two groups:

- One with regular annual rainfall, between 900 and 1 500 mm, concentrated in five to

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^{1/} Jorge Malleux, Evaluation of Forest Resources of People's Republic of Mozambique, Rome 1981

six month of the year (October- March), of varying altitude between sealevel and 600-800 meters. This group includes many areas of the Central and Northern parts of the country.

- One with irregular and low annual rainfall, concentrated in four to five months of the year (December-March) and with altitudes from 0 - 200 meters. This group includes various areas in the Southern and Central parts of the country which are semi-arid and with a high drought risk.

1.3. Agricultural Production.

Some 2.5 - 3 million ha are cultivated annually with pastures covering approximately 8 million ha.

The most important seasonal crops are maize (29.7% of cultivated area), cassava (16.0%), sorghum (13.4%), rice (2.7%), beans (6.5%), groundnut (9.1%), cotton (12.5%), sugar (1.7%).^{2/}

Dominant perennial crops are cashew, copra, tea and sisal.

The principal species of livestock are cattle (800 000 heads), sheep and goat (400 000 heads) and poultry (chicken and ducks).

Total agricultural production increased by 8.8% during the period 1977-81, but has fallen from 1982.

Statistics on GSP and marketed production may be found in the attached annex 2.

1.4. Sectors of Production.

Agricultural production originates in two main sectors, family and enterprise agriculture.

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^{2/} Brief Agricultural Monograph, Ministry of Agriculture, People's Republic of Mozambique, Maputo 1977.

Family agriculture, mainly dryland farming (approximately 2.5 - 3 million ha annually), is directed towards the production of basic food crops (maize, sorghum, cassava, groundnut, rice and fruits) and some export crops (cashew, cotton, copra) and to a minor degree some vegetables (pumpkin and sweet potato) under intercropping.

In this sector agricultural activities are carried out without using fertilizers or pesticides, with seeds of local varieties and with manual labour. The use of animal traction is limited to the Southern region and some areas in the Centre of the country.

Enterprise agriculture including private and state companies, occupies some 250 000 ha with seasonal and perennial crops. The sector is very important in terms of marketed production, both in foods (maize, vegetable fruits, meat, milk and eggs) and in exports (cotton, tea, copra, citrus, sisal and wood).

This sector normally uses improved seed, agro-chemicals and mechanized equipment.

The agricultural cooperatives constitute an intermediary sector between the two referred to in terms of technology, cultivating some 30 000 ha annually.

1.5. Development Constraints.

In spite of efforts made by the Government since Independence to increase production of basic food crops and animal products, and to produce sufficient agricultural raw materials and export crops for national industries and foreign markets, the aspired production objectives have not materialized.

The destabilizing actions of armed bandits, consecutive years of natural calamities (prolonged drought in the Southern and Central regions of the country and

floods in some of the major rivers) and the impact of the world economic crisis on Mozambique were factors in the steep drop in agricultural production from 1982.

In addition some of the main agricultural development constraints include:

- Pronounced scarcity of staff and qualified technicians at various levels (state apparatus, productive sector research and support services).
- Insufficient number and installed capacity of training institutions at elementary, medium and higher levels.
- Limited national capacity for production of agricultural inputs and scarce foreign currency, necessary to guarantee the availability of annual needs of such inputs.
- Research and support services for production (rural extension and laboratories) by small family farmers, in particular are still in their initial stage of development and encounter difficulties related to the limited availability of financial, material and human (qualified personnel) resources.
- Very insufficient marketing, storage and supply systems and a severe lack of consumer goods.

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2. BASIC ASPECTS OF GOVERNMENT'S DEVELOPMENT POLICY.

2.1. The objectives and policy criteria defined by the Fourth Congress of FRELIMO and by the Government to guide development policy in the coming years reflect two kinds of interacting elements: on the one hand, the long run strategy for a radical transformation of the existing socio-economic structure, which will lead to the consolidation of the material base of society and development of a socialist economy; and on the other hand, the conjunctural pressures, caused by a number of factors, among which the intensification of external aggression against the country may be found, and which imply a need to readjust economic development in accordance with existing constraints and in addition strengthen efforts to overcome present difficulties in an effective manner.

2.2. Within this context, basic objectives to be attained in the short and medium term include three fundamental aspects:

- i) A rapid increase in agricultural and industrial production to elevate the level of food supply and living conditions of the people;
- ii) An improvement in the balance of payment situation of the country through a reduction of foreign currency expenditures and an increase in export receipts;
- iii) A strengthened defence capacity for the struggle against all enemy aggressions and the defence of the integrity of the country.

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2.3. The materialization of these objectives presupposes the application of the following policy criteria:

- i) Intensive and efficient use of resources and installed productive capacity, minimizing the use of imported inputs. This implies productivity increases of existing factors of production rather than their expansion;
- ii) Mobilize local resources, capacity and initiative capable of having an immediate impact on the existing food supply, general living conditions of the People and defence of the Nation. This implies a need to support activities and sectors with a high output/investment ratio and with limited needs in terms of scarce and critical factors (specialized human resources, management capacity and imported inputs);
- iii) Intensify and rationalize the investment process taking into account the real capacity of the country and the development priorities. This implies a need to support with resources and scarce factors of production activities in strategic sectors which are critical for the transformation of the economy and the development of the base for a socialist society.
- iv) Up-grade, simplify and decentralize the planning system and management of the economy, ensuring efficient and operational state leadership in strategic economic activities. A fundamental aspect of this criteria is the strengthening of the capacity of provincial and district

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structures in planning and direction, making it possible in this way to achieve a correct equilibrium between central planning and strategic decisions and the integration of local initiatives.

3. GUIDELINES FOR MEDIUM-TERM AGRICULTURAL DEVELOPMENT.

3.1. The above objectives and global economic policy criteria of the country constitute the general framework within which an agricultural development programme for the coming years will be defined.

The developments in the country during the first five years of this decade, in which various factors hampered a harmonious and equilibrated development of the national economy (armed aggression, destabilizing actions, natural calamities, world economic crisis), and which affected agriculture most seriously, imply a need for formulating an agricultural development programme which combine short run emergency actions with medium to long run projects.

This task is one of the priorities of the work of the Ministry of Agriculture during this year and in this document a draft of some of the general guidelines for agricultural development in the coming five years is presented.

3.2. The definition of these guidelines takes as starting point that agriculture is the basis for socio-economic development of the country, given that agriculture is the main source of accumulation and that an overwhelming majority of the Mozambican people is involved in agricultural activities.

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3.3. During the coming five years the main objectives of agricultural development are:

- Improve the nutritional status of the people, diminishing significantly the existing deficit in cereals, legumes and oil crops;
- Increase the availability of animal protein, developing livestock raising which is less demanding in terms of imported feed or competitive with sources of food for human consumption, and fishculture;
- Increase the supply of fuel wood and wood for national use ;
- Support the strengthening of light industry producing consumer goods, with priority to cloth and clothes making, oilmaking for human consumption, soap and sugar, increasing the production and marketing of cotton, copra, sunflower, groundnut and sugarcane;
- Increase foreign currency receipts of the country through the production and export promotion of cashew, cotton, tea, copra, sisal, citrus, wood and tobacco, and give incentives to the diversification of export production utilizing existing potential and knowledge;
- Promote equilibrated and harmonious development at national and regional level and improve living conditions in the countryside thereby reducing migration to urban centres and neighbouring countries, to the benefit of the Mozambican People.

3.4. The entire fulfillment of these objectives implies the implementation of a range of

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policies, measures and actions, which are intimately linked and mutually conditioning, at various levels, branches and sectors of agriculture. Some - but not all of these issues are listed in the following without going into details.

3.4.1. Priority will be given to regions which due to their potential, population density, existing infrastructure and the investments already made can respond quickly to our needs. The following characteristics may be noted:

- In the regions, integrated development will be promoted depending on existing resources through:
 - . making activities in the various sectors of production compatible;
 - . diversifying and integrating agriculture (agriculture, livestock, forestry, beekeeping, fishculture), agroindustry and small-scale industries producing consumer goods;
 - . recuperating and rehabilitating existing social and productive infrastructures expanding them in accordance with needs.
- The organization of integrated agricultural development regions will be continued taking into account experiences being gained in some areas of the country (Chokwé, Lioma, Angónia, Montepuez, Moamba, etc.).
- Support to the development of irrigated production through integral utilization of

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existing irrigation systems and the installation of new systems making use of existing dams as well as those under construction mainly in the Central and Southern parts of the country (areas with drought risk).

3.4.2. In relation to sectors of production agricultural policy will continue along three convergent lines:

- Wideranging support and incentives to peasant production in the family and cooperative sector with a view to improving living conditions of rural people, increasing the availability of food and consumer goods in particular and generating gradually more surplus for urban centres, national industries and export. In this regard the following actions will be supported:

- . Distribution of land with good agricultural potential.
- . Regular supply of agricultural inputs and consumer goods.
- . Improvement in marketing and timely transport of production surpluses, adjusting price policies in order to provide incentives to the producers.
- . Development of applied agricultural research on the problems and farming systems of the peasants.
- . Development of rural extension and training systems based in specific projects, state companies and regional direction units with a view to introducing improved technology and better organized

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rural production.

- . Promotion of the organization of peasants in associations and producer cooperatives
- . Assistance to existing agricultural cooperatives, particularly with regard to technical and professional training.

- Restructuration and consolidation of state enterprises in order that their leading role in economic development may materialize. Along this line the following actions will be supported:

- . Definition of enterprise dimensions and production structure which will lead to economic viability and achievement of social objectives.
- . Technical and professional training of enterprise staff at various levels with a view to improved management.
- . Rehabilitation of social and productive infrastructures and replacement of agricultural equipment and transport means.
- . Improvement of the living conditions of agricultural workers, their ability to read and write and the mechanism for their participation in the definition and achievement of socio-economic objectives of the enterprises.
- . Strengthened articulation with the various sectors of production on the basis of reciprocal advantages within the framework

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of a rational distribution of work which promotes complementarity and integrated development of productive activities.

- Stimuli and assistance for the private sector to increase production and productive capacities, both in small and medium sized enterprises producing for local consumption and in import substituting or export promoting sectors, which ensure a return on invested capital and foreign currency for the national economy.

3.4.3. The policy for occupying and using land is based on the Land Act (already published) and on the Regulations of the Land Act (to be published shortly), which guarantee long term user rights in accordance with the characteristics and economic objectives of the sector to which a given producer belongs. Particular attention and measures are directed towards the correct utilization and conservation of natural resources.

3.4.4. With regard to rural extension activities are oriented along the following main lines:

- Systematize existing experiences at the level of the various regions, projects and enterprises.
- Consolidate and expand the extension networks in operation, improving their management and work methodologies and training continuously their technicians and staff.

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- Implant a training system at central and local level related with the policy and issues of rural development, turning it into a wideranging, dynamic and continuous movement involving leading cadres, intermediaries, national technicians and producers. In this context, particular attention will be given to rural women.

3.4.5. In relation to agricultural research priority actions include:

- Development of crop research programmes on basic food crops already in course (maize, rice, sorghum, beans, groundnut).
- Take off of programmes presently in their initial phase (cassava, sunflower, cotton, tea, cashew, sugar, fruits, vegetables).
- Integrated research of farming systems in use in the country.
- Development of forestry research mainly in the fields of seeds, silviculture, management and lumbering, wood technology and economics.
- Research on animal nutrition, pastures, improved management systems, reproduction and control of major animal diseases. Emphasis will be put on cattle, sheep and goats, pigs and poultry (ducks and chickens) and on local breeds.
- Inventories and studies on national land, water, flora and fauna resources.

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In accordance with the above priorities particular attention will be given to the organization and rehabilitation of the existing research network, to the involvement of projects and sectors of production in this activity and to the training of national technicians (higher, medium and elementary levels).

3.4.6. With reference to seeds, one of the key issues of agricultural production, the following lines of action are stressed:

- Priority to production of maize, rice, sorghum, beans, groundnut, cotton and sunflower to achieve national self-sufficiency in seeds. This self-sufficiency is equivalent to the supply of seeds to the enterprise sector and renovation of seeds of the family sector every four years.
- Development of basic seeds of the above mentioned crops.
- Implementation of a policy giving incentives to seed producers.
- Improvement of the capacity of the State Apparatus for seed quality control, certification, establishment of norms and legislation, planning and control of activities in this sector.
- Training of staff and national technicians necessary for the functioning of the above systems.

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3.4.7. In relation to the development of human resources efforts will be concentrated on:

- Literacy and education programmes for peasants and rural workers.
- Training, education and specialization programme for agriculture staff and technicians in accordance with the above priorities in production, research, rural extension, planning and management.
- Expansion of the capacity and improvement of the quality of training institutions at elementary , intermediate and higher levels.

3.4.8. With reference to prices and investments the following lines of action will be followed.

- Priority will be given to investments in accordance with the objectives and lines of action already referred to, with emphasis on rehabilitation and better utilization of existing productive capacity. New investments will be effectuated in connection with already existing infrastructure and/or presently under construction.
 - Foreign investments will be supported for the achievement of above mentioned objectives through fiscal and credit policies and favourable contracts.
 - Central and local state apparatus capacities for planning and control of investments will be gradually reinforced.
 - Stimulate production through adequate price policies for agricultural products and inputs, which implies a need to improve the capacity
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of the state apparatus to analyse and formulate price policies.

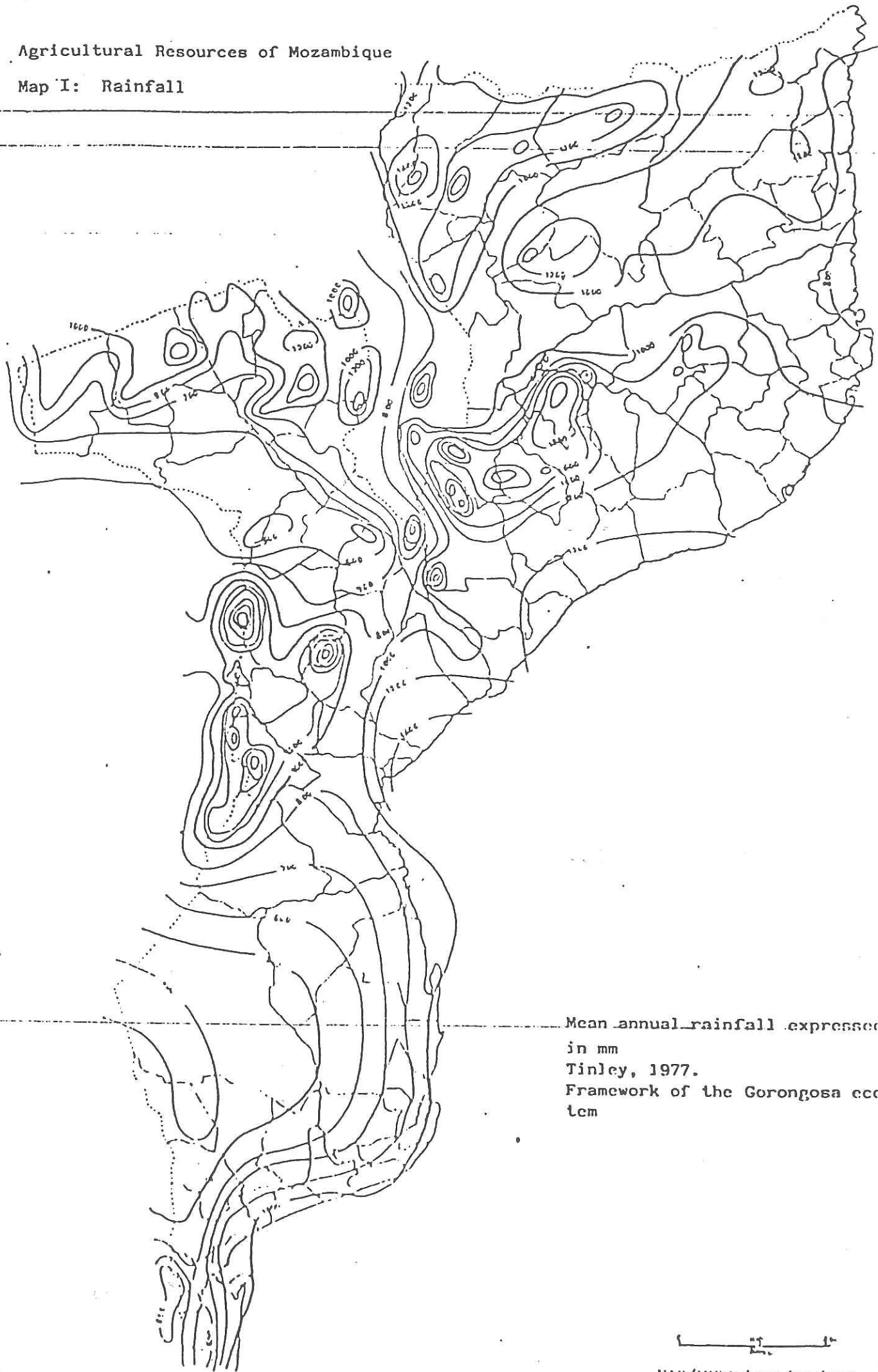
The issues reviewed above do not include all aspects which agricultural policy cover. They constitute as already indicated a general outline of medium term agricultural development.

Ministry of Agriculture
People's Republic of Mozambique

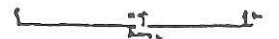
ANNEX 1: AGRICULTURAL RESOURCE MAPS
AND CROP DISTRIBUTION

Agricultural Resources of Mozambique

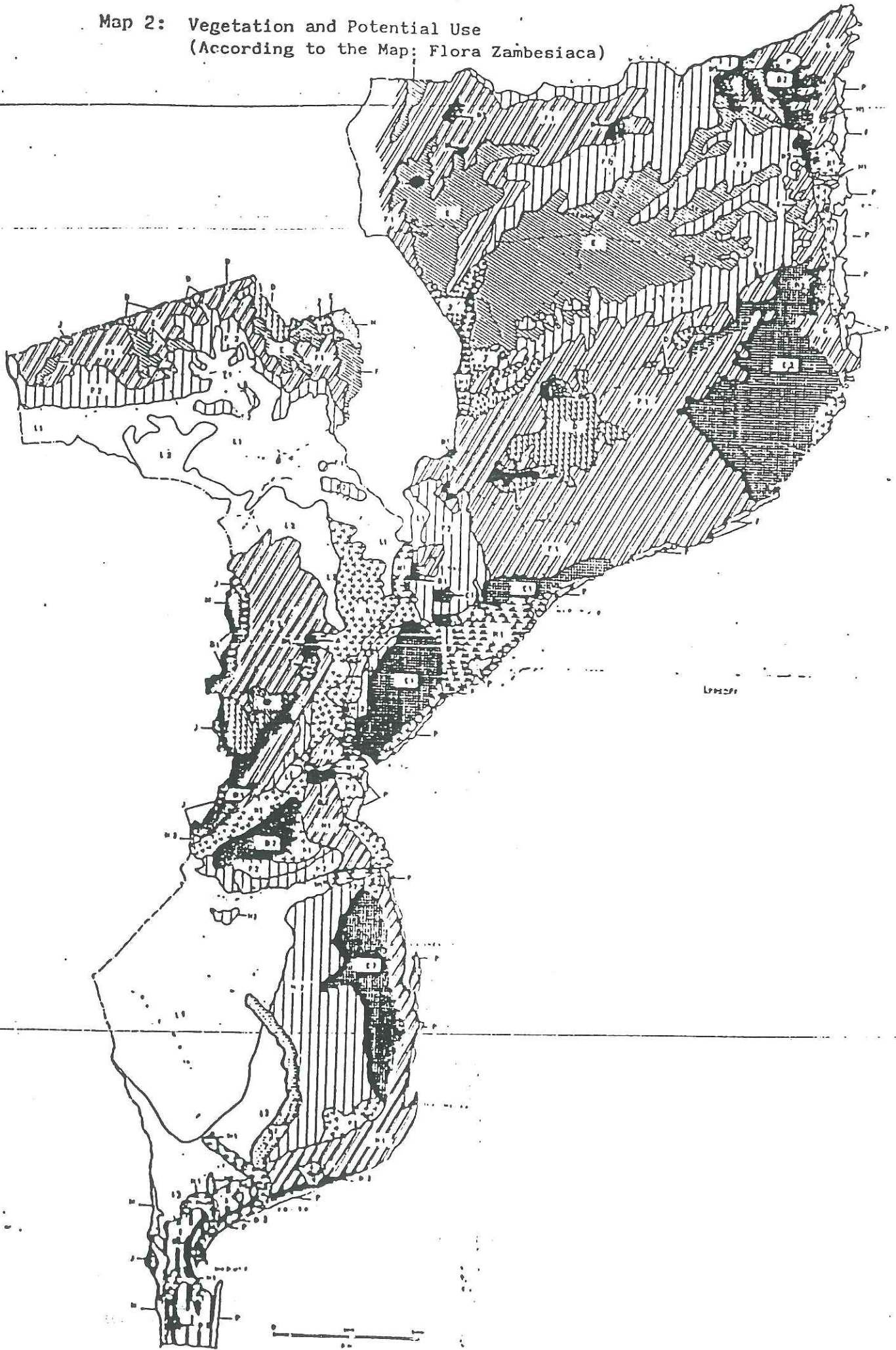
Map I: Rainfall



Mean annual rainfall expressed
in mm
Tinley, 1977.
Framework of the Gorongosa eco
lcm



Map 2: Vegetation and Potential Use
(According to the Map: Flora Zambesiaca)



Elaborado por:
Doutor coordenador de Recursos
Cromo (Doutor José) e Camacho
Análisis de Plano

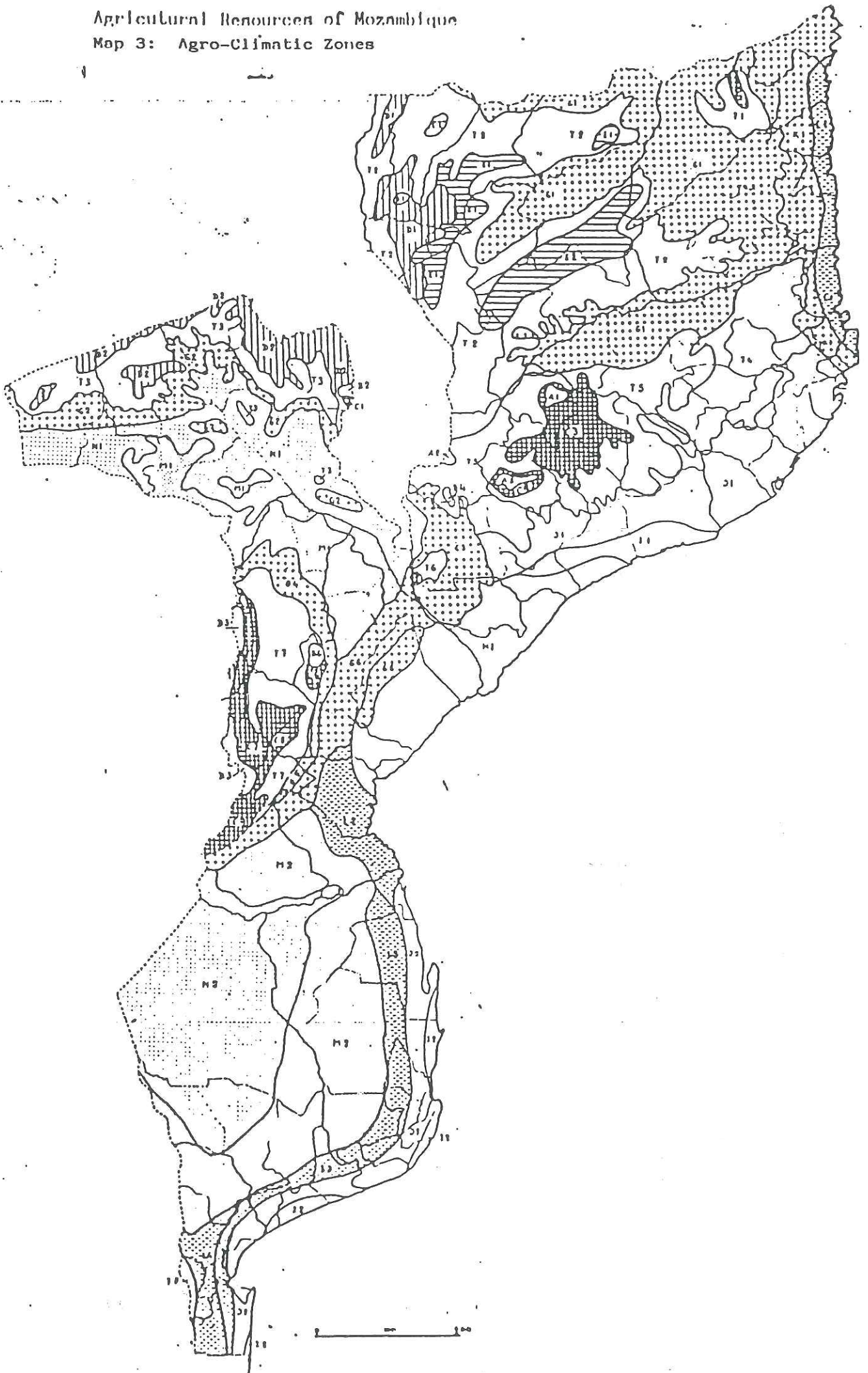
814 / 88
1961/1962 (1961-1962)
Elaborado de uso de terras e de
Amélio 1960

Legend

| Vegetation | Potential Use |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Closed and Thicket Forests</u> | |
| A. Pattern of altitude (1700-2000 mm) | Conservation |
| B1. Moist, evergreen and semi-deciduous | } Conservation and limited extraction of high profit value |
| B2. Dry, deciduous, semi-deciduous, South of Save River | |
| <u>Sub-littoral Forest and Open Forest Mosaic (Miombo type)</u> | |
| C1. Moist, semi-deciduous | } -Limited extraction of high profit wood -Local use for building -Apiculture, fuelwood |
| C2. Dry, deciduous | |
| <u>Inland Open Forest (Miombo type)</u> | |
| D. Semi-deciduous Miombo (rainfall 1200-1800 mm) | } -Local use for building (low quality) -Apiculture -Charcoal and fuelwood production -Some species of high profit Pterocarpus angolensis (umbila) Pericopsis angolensis Milletia stuhlmanni |
| E. Tardily deciduous Miombo (rainfall 900-1400 mm) | |
| F1. Deciduous open Miombo (rainfall 700-1000 mm) | |
| F2. Dry deciduous open Miombo (rainfall 400-700 mm) | |
| | |
| <u>Northern Sub-littoral and Southern sandy plains open Forest (Miombo type)</u> | |
| G. Northern littoral deciduous Miombo (Cabo Delgado rainfall 900-1200 mm) | -Local use for building low quality |
| H1. Southern sandy plains deciduous Miombo (rainfall 700-900 mm) | -Apiculture -Charcoal and fuelwood productions |
| H2. Southern sandy plains dry deciduous Miombo (rainfall 500-700 mm) | -Some species of high profit Pterocarpus angolensis (umbila) Pericopsis angolensis -The same use as mentioned above and islands of Androstachys johnsonii (high profit wood) |
| <u>Open Forests besides Miombo type</u> | |
| I. Sub-littoral open Forests south of Limpopo river with extra-tropical species | -Some species of high profit. -Silvan fruits (densely populated zone) |
| <u>Tree, Shrub and Herbal Savannas</u> | |
| J. Savanna over crystalline mother rock soils | -Over fertile soils occur Pterocarpus angolensis (populated zones) |
| K1. Sub-planaltics savannas and lowlands over sandstone, conglomerates calcareous soils. Dry deciduous | -Mountain zones of Manica and Libombos have intermediate aptitude for pastures |
| K2. Idem as K1 over badly drained soils | -Intermediate and high aptitude for pastures -Pasturages with Acacia nigrescens and Themeda triandra. Wet pasturages |
| L1. Savannas from Zambeze and Limpopo Valleys with defective and irregular rainfall, dry deciduous | -Low aptitude for pastures |
| L2. Idem as L1, very dry, early deciduous | |
| M. Herbal savannas from Libombos and Manica | -High aptitude for pastures in Libombos. Acacia nigrescens and Themeda triandra Intermediate aptitude in Manica for pastures (Parinari Laudelia) |
| <u>Tree, Shrub and herbal savannas from alluvial plains and coastal swamps</u> | |
| N1. Non saline soils | -High aptitude for pastures but limited drainage conditions |
| N2. Saline soils | -Low aptitude for pastures |
| P. Littoral and coastal dunes thicket | -No aptitude |


















Open Forest (Miombo type) reports bush dominated by Brachystegia and Julbernardia trees.

Agricultural Resources of Mozambique
Map 3: Agro-Climatic Zones



Agro-climatic Zones and their
agricultural suitabilities
for dryland agriculture

Generalized characteristics
of the Zones

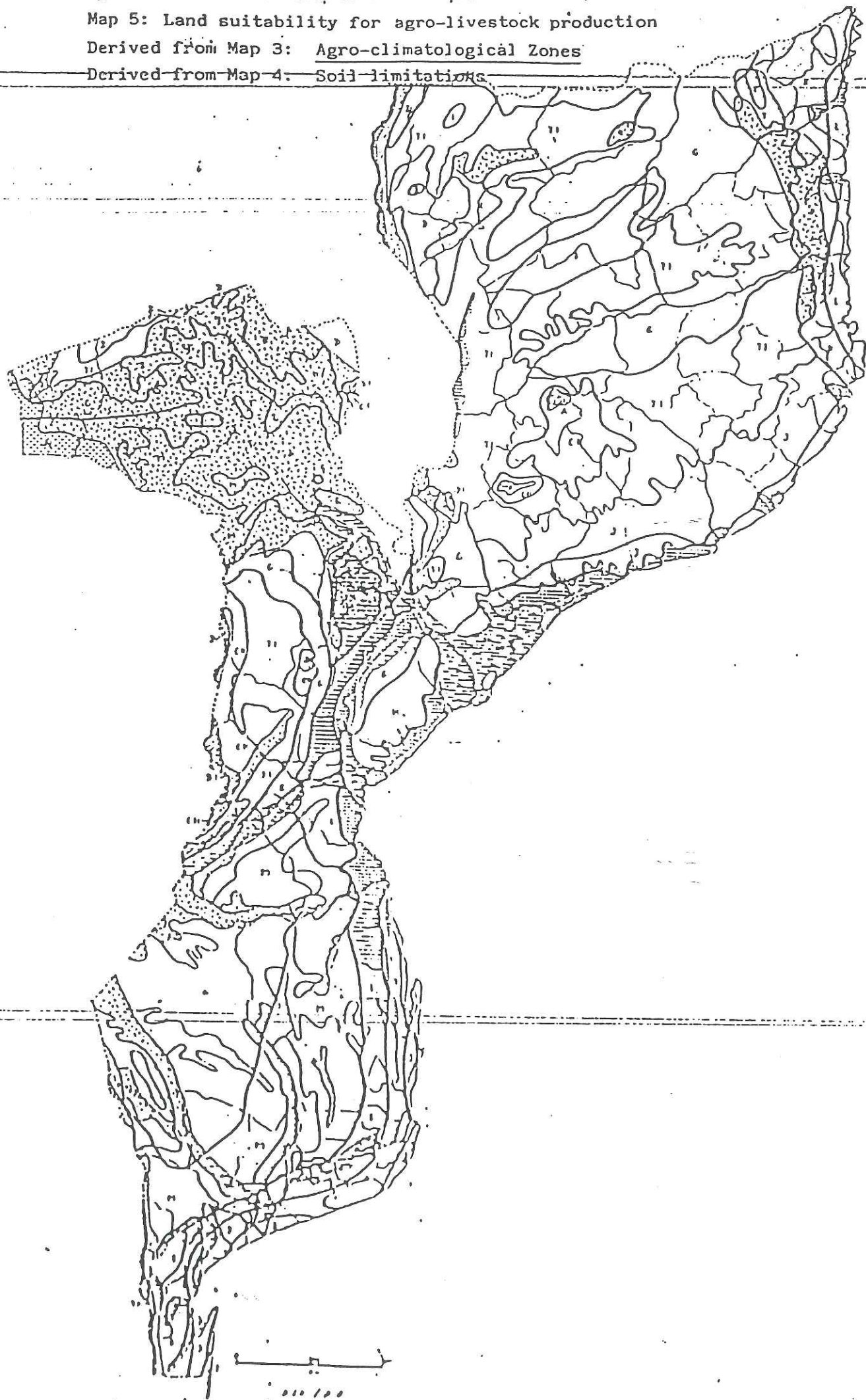
| | | | Rainy Season (months) | Altitude (meters) | Rainfall (mm) |
|-------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|------------------|
|  | A1-3 | Very wet plateaux with particular suitability for tea, bananas and coffee. | 9 | 500-1500 | 1.800-2.000 |
|  | B1-3 | Wet plateaux; suitable for wheat, potatoes and livestock production. Not so suitable for tea, bananas, coffee. | 7 | 1.000-1.700 | 1.200-2.000 |
|  | C1 | Plateau with a long rainy season. Suitable for wheat, maize, sunflower, soyabean, coconut and potatoes. | 6 | 1.000-1.500 | 900-1.400 |
|  | D-2 | Plateau with a rainy season during at least 5 months. Suitable for wheat, maize, sunflower, soyabean, coconut and potatoes. | 5 | 1.000-1.500 | 500-1.400 |
| <u>Intermediate Altitude Zones:</u> | | | | | |
|  | B4-6 | Wet Zones suitable for maize, soyabean and cassava. | 6-7 | 500-1.500 | 1.400-2.200 |
|  | | Zones with a long rainy season. Suitable for maize, soyabean, coconut and cassava. | 6 | 400-1.000 | 1.200-1.600 |
|  | E1-2 | Zones with a rainy season during at least 5 months. Suitable for maize, sunflower, soya, coconut and cassava. | 5 | 600-1.000 | 1.200-1.400 |
|  | F1-7 | Zones with a rainy season during 4 to 5 months, with a remote possible occurrence of dry periods. Suitable for maize, sorghum, sunflower, soyabean, cotton, coconut and cassava. | 4-5 | 200-1.000 | 600-1.400 |
|  | F8 | Zones with 6 months rainy season with a remote possible occurrence of dry periods. Suitable for maize, sorghum, sunflower and coconut. | 6 | 200-600 | 700-800 |
|  | G1-6 | Zones with a 4-5 months rainy season with an intermediate possible occurrence of dry periods. Suitable for sorghum, sunflower, cotton and cassava. | 4-4.5 | 200-600 | 700-1.200 |
| <u>Coastal Zones of Low Altitude</u> | | | | | |
|  | H1 | Wet Zones, suitable for maize, rice, soyabean, cassava, cocotree. | 7 | 0-200 | 200-1.400 |
|  | I1-2 | Zones with a long rainy season. Suitable for maize, soyabean, coconut, cassava, cocotree and cashew. | 6 | 0 | 1.000-1.200 |
|  | J1-2 | Zones with a 5 months rainy season with a little risk occurrence of dry periods. Suitable for maize, soyabean, cotton, coconut, cassava, cocotree and cashew. | 5 | 0-2 | 800-1.200 |
|  | K1 | Zone with a 4 months rainy season with an intermediate risk of occurrence dry periods. Suitable for sorghum, pearl millet, coconut, cassava and cashew. | 4 | 50-200 | 800-1.100 |
|  | L1-4 | Zones with a 4 months rainy season with a high risk of occurrence of dry periods. Suitable for sorghum, pearl millet. Not so suitable for coconut, cassava, cocotree and cashew. | 4 | 0-200 | 600-1.000 |
| <u>Dry and Very Dry Zones</u> | | | | | |
|  | M1-2 | Zones with a very low and irregular rainfall and with a 3-4 months rainy season. Suitable for pearl millet. Not so suitable for sorghum. | 3-4 | 50-600 | 500-700 |
|  | N1-2 | Zones with a very low and irregular rainfall and with a 2-3 months rainy season. Not so suitable for pearl millet. | 2-3 | 100-500 | 400-700 |

Agricultural Resources of Mozambique

Map 5: Land suitability for agro-livestock production

Derived from Map 3: Agro-climatological Zones

~~Derived from Map 4: Soil limitations~~



0 50 100
100 Kilometers

ZONES WITHOUT SEVERE LIMITATIONS DUE TO THE CLIMATE

Plateaux with a rainy season longer than 5 months with particular suitability to certain crops

- A Very wet plateaux, suitable for tea, banana and coffee
- B1 Wet plateaux, suitable for wheat, potatoes and livestock and not so suitable for tea, bananas and
- CI+ Plateaux with a rainy season of 5 - 6 months, suitable for wheat, maize, sunflower, soybean, coconut and potatoes

Zones with a rainy season longer than 5 - 6 months, very suitable for usual crops

- BII Wet zones with 6 - 7 months rainy season, suitable for maize, soybean, cassava
(intermediate altitude)
- CII Zones with 6 months rainy season, suitable for wheat, soybean, coconut and cassava
- E Zones with a rainy season of at least 5 months, suitable for maize, sunflower, soybean, coconut and cassava
- H Coastal wet lowland with a 7 months rainy season, suitable for maize, rice, soybean, cassava and coconut
(coastal lowlands)
- I Coastal lowland with a 6 months rainy season, suitable for maize, soybean, coconut, cassava and cashew

Zones with a small risk of dry periods during the rainy season

- FI Zones with a rainy season of 4 - 5 months, suitable for maize, sorghum, sunflower, cotton, coconut and cassava
(intermediate altitude)
- FII Zones with a 6 months rainy season, suitable for maize, sorghum, sunflower and coconut
- J Zones with a 5 months rainy season, suitable for maize, sorghum, soybean, cotton, coconut, cassava and cashew
(coastal lowlands)



Zones with an intermediate risk of dry periods during the 4-6 months rainy season

- G Zones of intermediate altitude, suitable for sorghum, pearl millet, sunflower, cotton and cassava
- K Coastal zones, suitable for sorghum, pearl millet, coconut, cassava and cashew




ZONES WITH SEVERE CLIMATIC LIMITATIONS

- L Zones with a 4 months rainy season-high risk of dry periods, suitable for sorghum, pearl millet; not so suitable for coconut, cassava and cashew
- M Zones with an irregular rainy season of 3 - 4 months, suitable for pearl millet, not so suitable for sorghum
- N Very dry zones with a 2-3 months rainy season, not so suitable for pearl millet



ZONES WHERE THE IMPROVEMENT DOES NOT DEPEND VERY MUCH ON THE CLIMATE, EXCESS OF WATER IN SOIL

-  Great rivers valleys with possibilities of irrigation
-  Zones with poorly drained soils along the coast and the interland, suitable for pastures

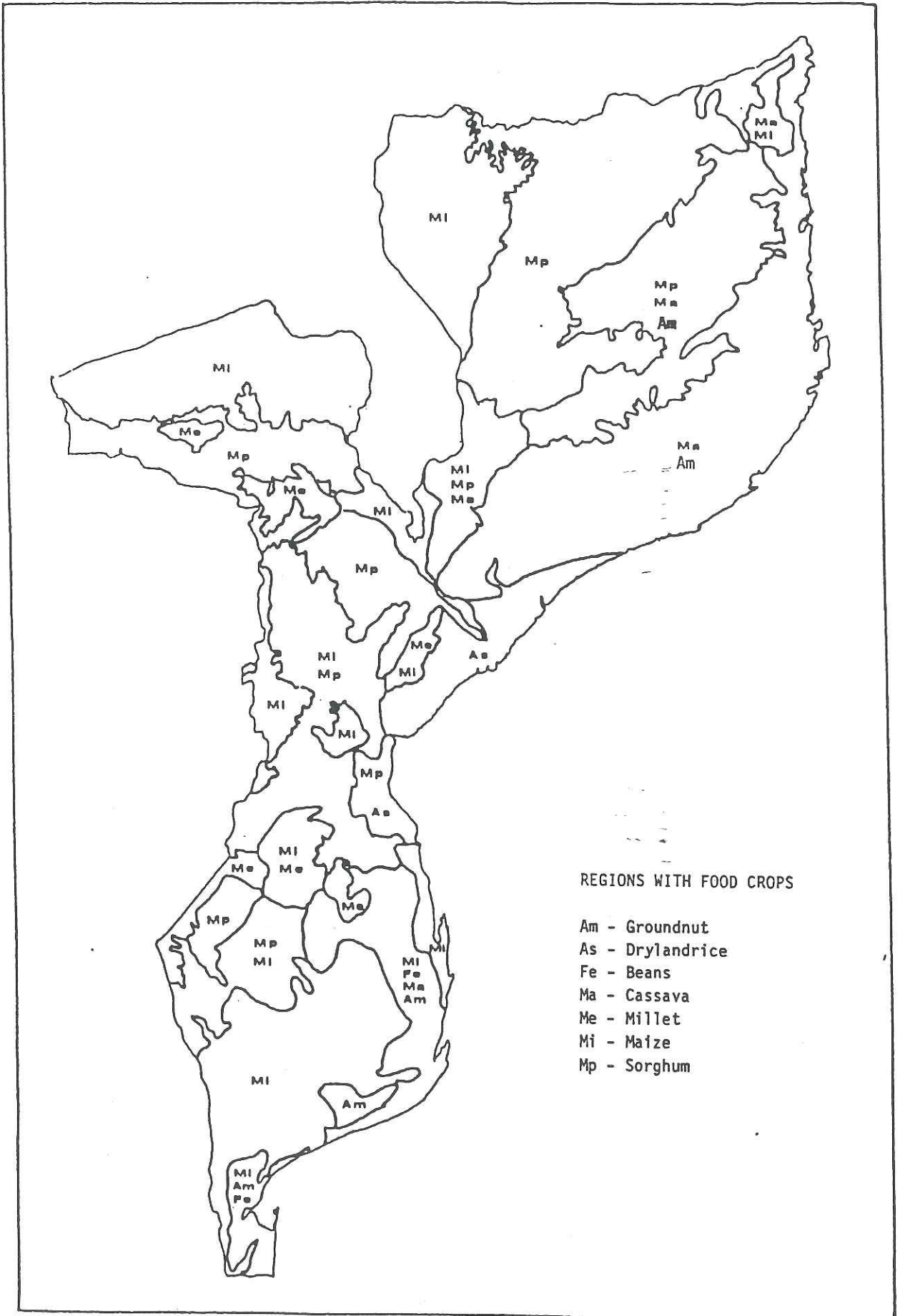
ZONES WITH SEVERE SOIL LIMITATIONS

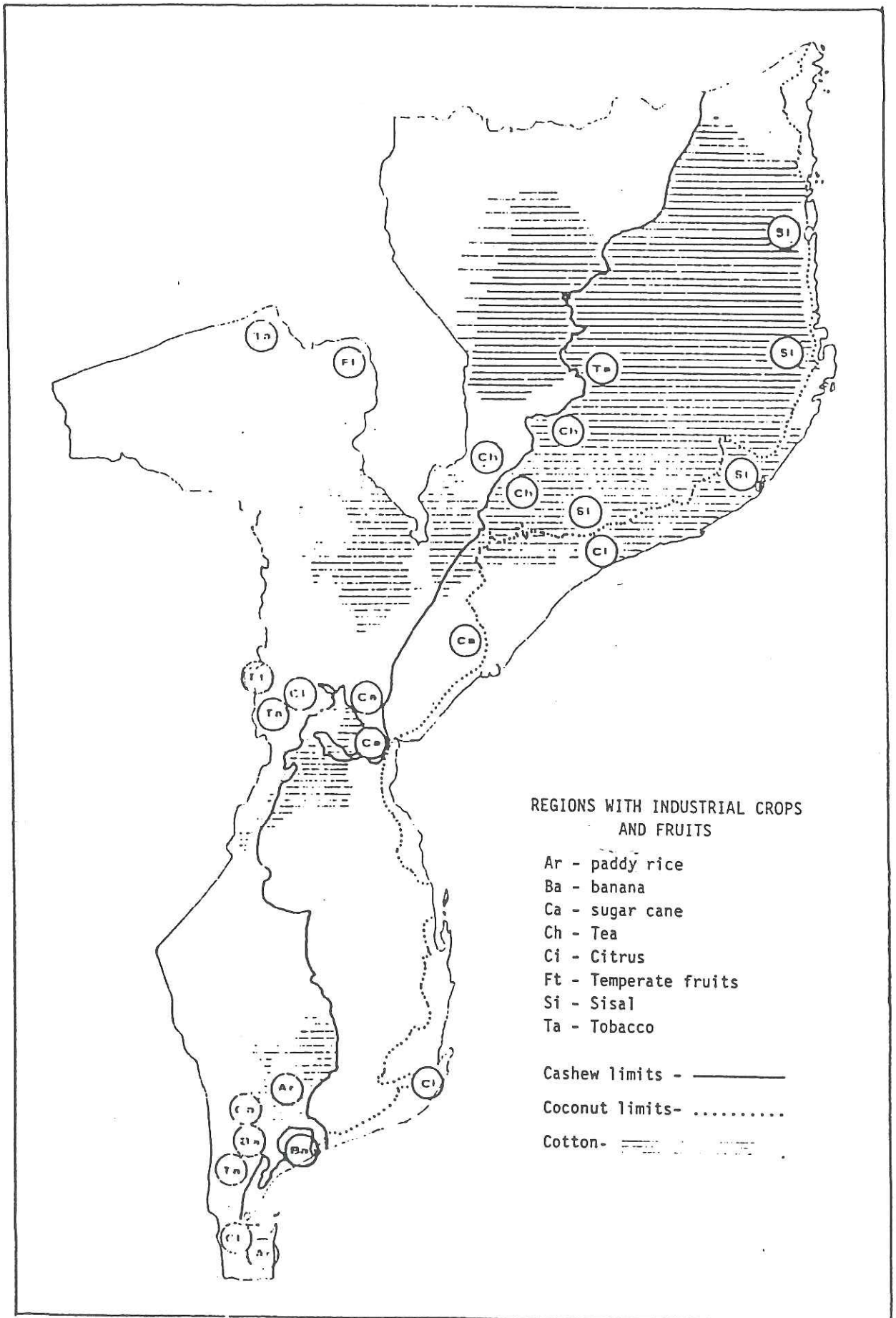
-  Zones with not very deep soils, stony or hill relief frequently associated to vertisols (black clay soils) in the great rivers valleys
-  Zones with saline soils
-  Zones with low AWC soils (very sandy soils)

ZONES WITH PARTICULAR SUITABILITY FOR PASTURES IN ZONES WITH SEVERE LIMITATIONS OF CLIMATE AND SOIL

-  Lowland pastures with deficient rainfall (Acacia nigrescens-Themeda triandra)
-  Pastures of high or intermediate altitude, mountainous

Note: The symbols of agro-climatic zones (A, B, etc.), correspond to zones described in detail Map 3: Drawing of the Agro-climatic zones





GROSS SOCIAL PRODUCT
CONSTANT 1980 PRICES

Unit: 10⁹ meticais

| SECTORS | 1975 | 1977 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|-----------------------------|------|------|------|------|------|------|------|------|
| AGRICULTURE | 24.8 | 29.8 | 30.8 | 31.1 | 30.8 | 24.0 | 24.4 | 24.6 |
| INDUSTRY | 28.0 | 28.4 | 32.6 | 33.6 | 29.0 | 23.2 | 18.0 | 14.3 |
| CONSTRUCTION | 4.0 | 3.6 | 4.8 | 4.7 | 4.9 | 5.0 | 4.5 | 4.3 |
| TRANSPORT AND COMMUNICATION | 9.1 | 7.8 | 8.1 | 9.0 | 8.3 | 6.6 | 5.1 | 4.5 |
| TRADE AND OTHERS | 5.5 | 5.2 | 5.9 | 5.8 | 5.8 | 5.5 | 5.8 | 5.5 |
| GSP PRODUCED | 71.4 | 74.8 | 82.1 | 84.1 | 78.8 | 64.4 | 57.9 | 53.3 |

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AGRICULTURAL PRODUCTION (a)

| Products | 1977/78 | | | 1978/79 | | | 1979/80 | | | 1980/81 | | |
|-------------------|---------|--------|--------|---------|--------|--------|---------|--------|--------|---------|--------|--------|
| | HA. | TON. | TON/HA | HA. | TON. | TON/HA | HA. | TON. | TON/HA | HA. | TON. | TON/HA |
| MAIZE | 10600 | 18400 | 1.78 | 18578 | 24194 | 1.30 | 27096 | 40410 | 1.49 | 31975 | 46942 | 1.47 |
| RICE | 15600 | 34200 | 2.19 | 23750 | 50200 | 2.12 | 25620 | 42579 | 1.66 | 2059 | 33976 | 1.65 |
| SISAL- LEAVES | | 375000 | | 11260 | 424072 | 37.60 | 16639 | 298016 | 17.91 | 16950 | 233940 | 13.80 |
| COPRA | 37900 | 27700 | 0.73 | 43618 | 26527 | 0.61 | 50643 | 26805 | 0.53 | 50352 | 18428 | 0.36 |
| TEA-LEAVES | 13000 | 67620 | 5.20 | 15937 | 86025 | 5.40 | 15940 | 90152 | 5.66 | 15956 | 99227 | 6.22 |
| SEED COTTON | 36000 | 33200 | 0.92 | 20690 | 14552 | 0.70 | 30629 | 22272 | 0.72 | 38639 | 40398 | 1.05 |
| CITRUS | 1650 | 38600 | 23.39 | 1781 | 39012 | 21.90 | 1835 | 37345 | 20.35 | 1676 | 36220 | 21.61 |
| POTATO | 1300 | 20200 | 15.54 | 2383 | 18528 | 7.78 | 1684 | 11105 | 6.59 | 2465 | 21574 | 7.92 |
| SUNFLOWER | 5000 | 1900 | 0.38 | 7366 | 2215 | 0.30 | 13438 | 3933 | 0.29 | 13354 | 5515 | 0.41 |
| BUTTER BEAN | 4100 | 1500 | 0.37 | 2488 | 526 | 0.21 | 3800 | 1296 | 0.34 | 4439 | 1284 | 0.29 |
| INDUSTRIAL TOMATO | | | | 864 | 11740 | 13.59 | 688 | 6378 | 9.27 | 700 | 2127 | 3.04 |
| VEGETABLES | 1400 | 6000 | 4.29 | 621 | 2331 | 3.75 | 1418 | 6427 | 4.53 | 920 | 6767 | 7.36 |
| TOBACCO | 3000 | 1500 | 0.50 | 2864 | 1727 | 0.60 | 2214 | 1405 | 0.63 | 1951 | 613 | 0.31 |
| ONION | 300 | 2400 | 8.00 | 392 | 3576 | 9.12 | 1262 | 8518 | 6.75 | 267 | 2490 | 9.33 |

| Products | 1981/82 | | | 1982/83 | | | 1983/84 | | | 1984/85 | | |
|-------------------|---------|--------|--------|---------|--------|--------|---------|--------|--------|---------|-------|--------|
| | HA. | TON. | TON/HA | HA. | TON. | TON/HA | HA. | TON. | TON/HA | HA. | TON. | TON/HA |
| MAIZE | 45733 | 65451 | 1.43 | 37669 | 41724 | 1.11 | 56952 | 60406 | 1.06 | 27229 | 39261 | 1.31 |
| RICE | 25375 | 40158 | 1.58 | 13502 | 22197 | 1.63 | 12076 | 22960 | 1.90 | 11410 | 29553 | 2.59 |
| SISAL- LEAVES | 8150 | 139850 | 17.16 | 8775 | 122412 | 13.95 | 14218 | 156572 | 10.99 | 6017 | 78777 | 13.09 |
| COPRA | 48400 | 20740 | 0.43 | 48319 | 20009 | 0.42 | 50568 | 16105 | 0.32 | 49192 | 16481 | 0.33 |
| TEA- LEAVES | 16360 | 109748 | 6.71 | 14408 | 51137 | 3.55 | 14560 | 59627 | 4.11 | 15168 | 25032 | 1.65 |
| SEED COTTON | 38128 | 31642 | 0.83 | 21126 | 17332 | 0.82 | 15457 | 11097 | 0.72 | 5801 | 3871 | 0.67 |
| CITRUS | 1780 | 38140 | 21.43 | 1783 | 33472 | 18.77 | 1654 | 23244 | 15.26 | 1686 | 31400 | 18.62 |
| POTATO | 3552 | 16040 | 4.52 | 1942 | 8498 | 4.38 | 460 | 5050 | 10.98 | 292 | 1849 | 6.33 |
| SUNFLOWER | 5880 | 1850 | 0.31 | 3376 | 1164 | 0.34 | 3897 | 169 | 0.04 | 1566 | 717 | 0.46 |
| BUTTER BEAN | 5877 | 1720 | 0.29 | 4418 | 1053 | 0.24 | 4954 | 1464 | 0.30 | 5441 | 1993 | 0.36 |
| INDUSTRIAL TOMATO | 767 | 6002 | 7.83 | 395 | 3378 | 8.55 | 1153 | 16646 | 14.44 | 1015 | 13409 | 13.21 |
| VEGETABLES | 843 | 5592 | 6.63 | 1207 | 7859 | 6.51 | 2251 | 13973 | 6.21 | 3407 | 38235 | 11.22 |
| TOBACCO | 1648 | 862 | 0.52 | 1454 | 707 | 0.49 | 1227 | 751 | 0.61 | 693 | 359 | 0.52 |
| ONION | 238 | 1048 | 4.40 | 148 | 732 | 4.95 | 746 | 6913 | 9.27 | 238 | 2388 | 10.03 |

(a) Includes State, Cooperative and Private Sectors

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DEVELOPMENT OF MARKETED AGRICULTURAL PRODUCTION

| Products | Unit | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|--------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Cashewnuts | 10 ³ TON | 160.0 | 120.0 | 102.0 | 90.0 | 62.6 | 87.6 | 90.1 | 57.0 | 18.1 | 25.3 | 30.4 |
| CottonSeed | 10 ³ TON | 52.0 | 36.8 | 52.0 | 72.4 | 36.8 | 64.9 | 73.7 | 60.7 | 24.7 | 19.7 | 5.7 |
| Rice | 10 ³ TON | 94.0 | 75.0 | 60.0 | 44.0 | 56.3 | 43.6 | 28.9 | 41.5 | 17.3 | 11.1 | 17.9 |
| Maize | 10 ³ TON | 45.0 | 90.0 | 34.0 | 70.0 | 66.0 | 65.0 | 78.3 | 89.2 | 55.8 | 82.6 | 58.6 |
| Sunflower | 10 ³ TON | 8.0 | 7.0 | 10.0 | 7.0 | 4.8 | 11.8 | 12.1 | 10.8 | 7.3 | 5.0 | 5.7 |
| Potato | 10 ³ TON | 40.0 | 30.0 | 15.0 | 25.0 | 15.2 | 9.0 | 13.9 | 9.4 | 8.3 | 3.1 | 1.5 |
| Vegetables | 10 ³ TON | 4.0 | 3.0 | 2.0 | 6.0 | 2.3 | 6.4 | 6.8 | 5.6 | 7.9 | 20.0 | 33.9 |
| Beans | 10 ³ TON | 14.8 | 14.0 | 14.0 | 10.1 | 13.0 | 9.6 | 14.9 | 6.9 | 4.7 | 3.5 | 3.6 |
| Copra | 10 ³ TON | 50.4 | 72.0 | 48.0 | 60.0 | 51.0 | 37.1 | 54.4 | 36.6 | 30.7 | 24.8 | 24.0 |
| Citrus | 10 ³ TON | 34.0 | 30.0 | 25.0 | 38.6 | 39.0 | 37.3 | 36.7 | 38.1 | 33.5 | 24.6 | 31.5 |
| Tea leaves | 10 ³ TON | 59.1 | 67.3 | 77.3 | 67.6 | 86.0 | 90.2 | 94.2 | 109.7 | 51.1 | 59.8 | 25.0 |
| Sisal leaves | 10 ³ TON | 340.0 | 325.0 | 325.0 | 375.0 | 424.1 | 298.0 | 233.8 | 139.9 | 122.4 | 136.6 | 78.8 |
| Beef | 10 ³ TON | 14.7 | 10.6 | 11.0 | 7.0 | 8.3 | 8.3 | 7.8 | 7.2 | 5.8 | 4.7 | 3.2 |
| Pork | 10 ³ TON | 2.3 | 1.0 | 0.4 | 2.0 | 2.6 | 3.3 | 3.9 | 3.7 | 1.8 | 1.1 | 2.7 |
| Poultry | 10 ³ TON | 2.8 | 2.8 | 2.9 | 4.0 | 4.5 | 6.4 | 5.7 | 3.4 | 1.5 | 1.5 | 0.6 |
| Eggs | 10 ⁶ UNZ | 12.5 | 12.0 | 14.1 | 19.9 | 33.6 | 45.9 | 48.0 | 49.7 | 24.6 | 37.8 | 34.7 |
| Milk | 10 ⁶ LIT | 5.1 | 4.7 | 3.4 | 5.2 | 5.1 | 5.7 | 5.5 | 5.3 | 5.3 | 4.5 | 3.4 |

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AGRICULTURAL MARKETING (TONS)

| | 1980 | | | | | 1982 | | | | | |
|--------------|--------|-------|-------|---------|--------|--------------|--------|-------|-------|--------|-------|
| | TOTAL | State | Coop. | Privat. | Family | TOTAL | State | Coop. | Priv. | Family | |
| MAIZE | 65000 | 30800 | 1900 | 7300 | 25000 | MAIZE | 86151 | 44477 | 1458 | 3762 | 36454 |
| RICE | 43600 | 33000 | 1300 | 2000 | 7300 | RICE | 41542 | 37677 | 979 | 197 | 2659 |
| SORGHUM | 612 | 100 | 72 | 0 | 440 | SORGHUM | 1561 | 534 | 3 | 1 | 1023 |
| SUNFLOWER | 11800 | 1600 | 600 | 1700 | 7900 | SUNFLOWER | 10800 | 933 | 245 | 264 | 9358 |
| SESAME | 0 | 0 | 0 | 0 | 0 | SESAME | 884 | 0 | 7 | 8 | 869 |
| GROUNDNUT | 6300 | 0 | 100 | 400 | 5800 | GROUNDNUT | 1453 | 21 | 10 | 6 | 1416 |
| COPRA | 37100 | 15000 | 0 | 11800 | 10300 | COPRA | 36617 | 10830 | 0 | 9410 | 15877 |
| MAFURRA | 0 | 0 | 0 | 0 | 0 | MAFURRA | 6379 | 0 | 0 | 0 | 6379 |
| BEANS | 9400 | 700 | 100 | 500 | 8300 | BEANS | 6873 | 576 | 43 | 92 | 6162 |
| CASSAVA | 8400 | 0 | 0 | 0 | 8400 | CASSAVA | 9506 | 30 | 10 | 475 | 8991 |
| CASHEW | 87600 | 0 | 0 | 0 | 87600 | CASHEW | 57000 | 0 | 0 | 0 | 57000 |
| SEED COTTON | 64872 | 15146 | 576 | 6550 | 42600 | SEED COTTON | 60742 | 25323 | 275 | 6044 | 29100 |
| TEA LEAVES | 90152 | 79380 | 0 | 10772 | 0 | TEA LEAVES | 109748 | 95120 | 0 | 14628 | 0 |
| WHEAT | 619 | 619 | 0 | 0 | 0 | WHEAT | 1024 | 877 | 59 | 88 | 0 |
| SISAL LEAVES | 205016 | 95416 | 0 | 202600 | 0 | SISAL LEAVES | 139850 | 45650 | 0 | 94200 | 0 |
| TOBACCO | 1405 | 861 | 44 | 500 | 0 | TOBACCO | 862 | 584 | 30 | 248 | 0 |
| POTATO | 9000 | 9000 | 0 | 0 | 0 | POTATO | 9400 | 7600 | 0 | 1800 | 0 |
| VEGETABLES | 6427 | 3193 | 662 | 2572 | 0 | VEGETABLES | 5592 | 3869 | 221 | 1502 | 0 |
| ONION | 6000 | 5400 | 100 | 500 | 0 | ONION | 950 | 800 | 0 | 150 | 0 |
| TOMATO | 6378 | 4868 | 1438 | 72 | 0 | TOMATO | 6002 | 4450 | 412 | 1140 | 0 |
| CITRUS | 37345 | 37345 | 0 | 0 | 0 | CITRUS | 38140 | 38140 | 0 | 0 | 0 |

| | 1981 | | | | | 1983 | | | | | |
|--------------|--------|-------|-------|--------|--------|--------------|--------|-------|-------|--------|-------|
| | TOTAL | State | Coop. | Privt. | Family | TOTAL | State | Coop. | Priv. | Family | |
| MAIZE | 78324 | 33789 | 1704 | 5986 | 36845 | MAIZE | 55803 | 27232 | 785 | 2802 | 24984 |
| RICE | 28860 | 25594 | 1407 | 687 | 1172 | RICE | 17268 | 15022 | 546 | 138 | 1562 |
| SORGHUM | 977 | 297 | 10 | 80 | 590 | SORGHUM | 1314 | 343 | 27 | 29 | 915 |
| SUNFLOWER | 12000 | 3285 | 509 | 1546 | 6740 | SUNFLOWER | 7269 | 602 | 152 | 395 | 6120 |
| SESAME | 507 | 0 | 67 | 85 | 355 | SESAME | 292 | 0 | 17 | 4 | 271 |
| GROUNDNUT | 4952 | 15 | 0 | 0 | 4937 | GROUNDNUT | 668 | 20 | 0 | 0 | 648 |
| COPRA | 54339 | 15000 | 0 | 12734 | 26665 | COPRA | 30659 | 9796 | 0 | 10163 | 10700 |
| MAFURRA | 3803 | 0 | 0 | 0 | 3803 | MAFURRA | 5690 | 0 | 0 | 0 | 5690 |
| BEANS | 14879 | 497 | 66 | 316 | 14000 | BEANS | 4754 | 889 | 67 | 494 | 3304 |
| CASSAVA | 10409 | 0 | 0 | 154 | 10755 | CASSAVA | 8542 | 35 | 5 | 1 | 8501 |
| CASHEW | 90100 | 0 | 0 | 0 | 90100 | CASHEW | 18100 | 0 | 0 | 0 | 18100 |
| SEED COTTON | 73668 | 33932 | 420 | 6036 | 33300 | SEED COTTON | 24732 | 14872 | 476 | 1984 | 7400 |
| TEA LEAVES | 99227 | 88200 | 0 | 11027 | 0 | TEA LEAVES | 51137 | 48591 | 0 | 2546 | 0 |
| WHEAT | 429 | 359 | 60 | 10 | 0 | WHEAT | 724 | 703 | 19 | 2 | 0 |
| SISAL LEAVES | 233836 | 65006 | 0 | 168750 | 0 | SISAL LEAVES | 122412 | 39910 | 0 | 82502 | 0 |
| TOBACCO | 813 | 465 | 19 | 329 | 0 | TOBACCO | 707 | 574 | 29 | 104 | 0 |
| POTATO | 13900 | 11800 | 200 | 1900 | 0 | POTATO | 8300 | 7000 | 0 | 1300 | 0 |
| VEGETABLES | 6787 | 4734 | 69 | 1984 | 0 | VEGETABLES | 7859 | 4451 | 189 | 3219 | 0 |
| ONION | 2400 | 2070 | 0 | 330 | 0 | ONION | 600 | 500 | 0 | 100 | 0 |
| TOMATO | 2127 | 831 | 648 | 648 | 0 | TOMATO | 3378 | 2717 | 488 | 173 | 0 |
| CITRUS | 36680 | 36680 | 0 | 0 | 0 | CITRUS | 33472 | 33472 | 0 | 0 | 0 |

AGRICULTURAL MARKETING (CONT.)

1984

| | TOTAL | State | Coop. | Priv. | Family |
|--------------|--------|-------|-------|-------|--------|
| MAIZE | 82561 | 46115 | 962 | 3742 | 31742 |
| RICE | 19087 | 15131 | 333 | 443 | 3160 |
| SORGHUM | 2141 | 392 | 102 | 19 | 1628 |
| SUNFLOWER | 5018 | 377 | 125 | 365 | 4131 |
| SESAME | 334 | 1 | 10 | 3 | 320 |
| GROUNDNUT | 2044 | 46 | 10 | 2 | 1986 |
| COPRA | 24836 | 11000 | 0 | 9910 | 3926 |
| MAFURRA | 5270 | 0 | 0 | 0 | 5270 |
| BEANS | 3549 | 742 | 62 | 393 | 2352 |
| CASSAVA | 6857 | 3350 | 21 | 98 | 3388 |
| CASHEW | 25314 | 0 | 0 | 0 | 25314 |
| SEED COTTON | 19722 | 8468 | 262 | 2325 | 8627 |
| SEA LEAVES | 59627 | 58615 | 0 | 1212 | 0 |
| WHEAT | 466 | 438 | 24 | 4 | 0 |
| SISAL LEAVES | 136572 | 55547 | 0 | 81025 | 0 |
| TOBACCO | 751 | 637 | 46 | 68 | 0 |
| POTATO | 3086 | 2018 | 0 | 1068 | 0 |
| VEGETABLES | 19973 | 10185 | 1019 | 8769 | 0 |
| ONION | 4696 | 3118 | 136 | 1242 | 200 |
| TOMATO | 16646 | 4427 | 526 | 11693 | 0 |
| CITRUS | 24606 | 24501 | 0 | 0 | 105 |

1985

| | TOTAL | State | Coop. | Priv. | Family |
|--------------|-------|-------|-------|-------|--------|
| MAIZE | 58581 | 21906 | 1208 | 5736 | 29651 |
| RICE | 17894 | 12581 | 330 | 1100 | 3883 |
| SORGHUM | 1812 | 219 | 60 | 161 | 1372 |
| SUNFLOWER | 5690 | 349 | 47 | 307 | 4987 |
| SESAME | 282 | 0 | 4 | 3 | 275 |
| GROUNDNUT | 2001 | 30 | 2 | 1 | 1968 |
| COPRA | 24014 | 9503 | 0 | 6978 | 7533 |
| MAFURRA | 2594 | 0 | 0 | 0 | 2594 |
| BEANS | 3612 | 706 | 54 | 160 | 2692 |
| CASSAVA | 6367 | 1286 | 31 | 760 | 4290 |
| CASHEW | 30355 | 0 | 0 | 0 | 30355 |
| SEED COTTON | 5681 | 3301 | 14 | 556 | 1810 |
| SEA LEAVES | 25032 | 24369 | 0 | 663 | 0 |
| WHEAT | 64 | 45 | 3 | 16 | 0 |
| SISAL LEAVES | 78777 | 44424 | 0 | 34353 | 0 |
| TOBACCO | 359 | 314 | 15 | 30 | 0 |
| POTATO | 1527 | 1050 | 0 | 450 | 27 |
| VEGETABLES | 33884 | 10684 | 970 | 20646 | 1384 |
| ONION | 2035 | 1000 | 100 | 800 | 135 |
| TOMATO | 13409 | 3239 | 855 | 9315 | 0 |
| CITRUS | 31510 | 31400 | 0 | 0 | 110 |