report

CR-A-219A (Appendices)

Cape Verde Assessment of the Agricultural Sector

Submitted to:

AFR/RA/PSA
Agency for International Development
Washington, D.C.

Prepared by:

Peter H. Freeman
Victor E. Green
Robert B. Hickok
Emilio F. Moran
Morris D. Whitaker

Under contract

AID/afr-C-1142, W.O. # 62

August 1978

GENERAL RESEARCH CORPORATION
7655 Old Springhouse Road, McLean, Virginia 22101

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Appendices

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Appendix I. METHODOLOGY FOR ESTIMATING SECTORIAL GNP

The assumptions and bases for estimating the value of the final production of each sector are discussed in this appendix, sector by sector. The base year for the analysis is 1976, the most recent year for which data are available.

There are three principal classes of products from agriculture: rainfed crops; irrigated crops; and livestock products. Estimates of the production and 1976 value of principal rainfed agricultural crops were presented in Table V.2 for three rainfall regimes within the drought cycle. It was assumed, for purposes of this analysis, that rainfall in 1976 led to average production underdrought conditions of $14.6 million from corn, beans, rainfed sweet potatoes, and coffee (Table V.2). With optimal or poor rain, production would vary accordingly, as it usually has done from year to year in the drought cycle. The production and 1976 retail value of irrigated crops within the drought cycle were presented in Table V.3, with total production valued at $16.3 million. The live weight of livestock slaughtered at municipal slaughterhouses was presented in Table V.5. Assuming standard dressing yields (cattle 48 percent; goats 55 percent; sheep 50 percent; and pigs 70 percent) and 1976 retail prices, the carcass value of livestock in 1976 was $0.4 million.

In all cases, agricultural products were valued at retail prices. This was done to account for the commercial, industrial, and services activities associated with processing and marketing agricultural products, since no data were available to find the value added in these important sectors.

The total fish, lobster, and shellfish catch in Cape Verde declined significantly in 1976 relative to previous years, which likely reflects a seasonal aberration (Appendix Table I.1). Consequently, the average catch for 1972-75 was used as the basis for determining the value of fish production at 1976 prices. Domestic consumption of the average 1972-75 catch of processed fish, and lobster and shellfish, was approximated by subtracting the 1976 exports. Processed fish, lobster, and shellfish exports were first multiplied by a factor of 1.33 (exports of fish meal were multiplied by a factor of 2) to adjust for losses and waste associated with processing. Exports were valued at the F.O.B. export price, while aver-

APPENDIX TABLE I-1.

FISH CATCH IN CAPE VERDE, 1966-1977[a]

Year	Fish (Tons)	Lobster (Tons)	Mollusks (Tons)
1966	3,998	22	N[b]
1967	5,890	41	7
1968	4,825	52	2
1969	3,897	97	3
1970	4,953	125	2
1971	4,017	190	2
1972	3,856	192	N
1973	4,037	149	-
1974	3,260	163	3
1975	3,810	89	3
1976	1,908	113	3
1977			

[a]Cape Verde, *Boletim Trimestral de Estatística*, 4° trimestre, Praia: Serviço Nacional de Estatística, 1966-1976.

[b]N = negligible.

age domestic consumption for 1972-75 was valued at 1976 retail prices in order to account for commercial, industrial, and services activities associated with processing and marketing fish products.

The importance of the Government of Cape Verde (GOCV) in the national economy can be inferred from data from the 1976 and 1977 budgets (Cape Verde, *Orcamento Geral*). Basically, the GOCV is involved in three classes of economic activity: traditional services; public enterprises; and special public works and relief operations associated with the drought. In 1976, the GOCV budget was $30.3 million. The budget for public works and relief operation was $13.7 million, while the combined budget for traditional services and for public enterprises (such as the International Airport Amilcar Cabral on Sal Island and the Cape Verdian Airlines) was another $16.6 million. Assuming that the budget of $5.6 million for public enterprises in 1977 approximates that for 1976 (no data are at hand for 1976) the 1976 budget for traditional services was $11 million.

Appendix II

Translation of the Summary of Report "Etude et Mise en Valeur des Eaux Souterraines Dans l'Archipel du Cap Vert, by BURGEAP.

I. INTRODUCTION

Located 500 km offshore Senegal, the archipelago of Cap Vert covers only approximately 4,000 square km. Its population, which is very unevenly distributed among 9 islands, stands presently at 270,000.[1]

These volcanic islands, whose relief is very pronounced (the island of Fogo, for example, tops the elevation scale at over 2,800 m), are subjected to the influence of trade-winds and the monsoon. Heavy but irregular precipitations occur mostly during a 3- to 4-month period of the year. While lowlands receive an average of less than 300 mm of rainfall per year, the elevated areas are clearly wetter (up to 1 m or more) than is otherwise indicated by the generally desert-like aspect of the land.

Beginning in 1968, this group of islands has suffered from a very severe period of drought which seems to be the longest and most difficult among all those it has sustained in its history. This history, on the other hand, has been marked by appalling fluctations in its population which is decimated from time to time by dreadful starvation.

The economy of the islands is still basically agricultural. Founded primarily on products of the soil (sequeiros), which can exceed food requirements during the years when rainfall is normal, it remains almost entirely dependent on rainfall conditions.

The total area of irrigated crops (sugarcane, banana, manioc), in fact, hardly exceeds 2,000 hectares, to include 1,000 in Santo Antao and 700 in Santiago.

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[1]The number of Cap Vert inhabitants who have emigrated to Africa, Europe, and America during the last half-century or so reportedly exceeds 200,000.

This can be largely explained by the fact that the steep gradient of valleys and strong floodwater currents make it difficult and hazarduous to store running water. Hydro-agricultural development, therefore, has been linked to the discovery and harnessing of underground waters.

However, these underground waters remain virtually unexplored because until recently only those waters which can be conveyed by force of gravity (with their sources and collection located in drainage areas) have been used. It is only very recently (beginning in 1970) that wells have been built and operated by pumps; but these wells are not deep enough and their flows are limited.

As for drillings, the first efforts were conducted on the island of Santiago in 1972 within the framework of the hydrogeologic program which is the subject of this report.

II. GENERAL

A. Scope of the program

The BURGEAP mission, which was conducted from September 1971 to December 1973, assumed the technical direction of a program designed to research and harness underground waters. The implementation of this program was the responsibility of the Cap Vert Underground Waters Brigade.

Within this frame of reference, the program consisted of making an inventory of water resources and water holes, defining the possibilities of exploitation, conducting geophysical surveys, organizing research in terms of wells or drilling and to originate initial pumping equipment.

B. Geology and Hydrogeology

Despite their extreme morphological diversity, the islands of Cap Vert possess a certain geological unity from which we can draw a common hydrogeologic parttern consisting of three major volcanic formations.

1. A basic formation, constituted by an ancient, pre-Miocene, and very dense complex and disruptive Miocene gaps. This basic rock formation is hardly permeable. Water flows obtained by drilling into this formation have a fairly uniform rate of a few cubic meters/hour.

2. An intermediary formation, Mio-Pliocene, and consisting of an accumulation of major outflows, which constitutes the foundation of all elevations in the islands. This is the principal reservoir of the archipelago.

3. A recent formation of lavas and pyroclasts which locally forms a very permeable covering through which water can easily infiltrate.

There are levels of pillow-lavas and alluvia, found only in the larger islands (Santiago and Santo Antâo), which constitute drainage formations and preferential collection areas.

While waters in ancient formations may be quite loaded, they are very lightly mineralized in intermediary and recent formations.

C. Climate survey and general estimate

Precipitations, which occur mostly during a few months, are heavier than is otherwise indicated by the arid outlook of the archipelago, but they are extremely irregular. Since 1968, the islands have suffered an unusual drought during which rainfall levels have not even reached 40% of the average values recorded during the last 30 years.

As to the feeding of water springs, its evaluation is too problematical to allow an accurate calculation of the renewal rate of underground waters. However, from the outlet flows of a certain number of drainage basins, we have been able to establish an empirical formula which directly relates infiltrations to yearly precipitations. This method, whose merits are confirmed by experience, has enabled us to make an estimate of resources for the more elevated, wetter islands.

An analysis of unusual daily rains has also permitted us to estimate, in terms of approximate volume, the resources of lower and drier islands.

In general, our study of estimated underground water resources for the entire archipelago reveals a probable supply in excess of 220,000 cubic meters/day, whereas actual exploitation of these resources amounts to only 80,000 cubic meters/day for an average year.

D. Survey and exploitation of underground waters

Following a quick structural study which was conducted in 1969 with the aid of aerial photos, our mission has benefited from the geological works by Mr. Serralheiro (mission L.E.P.P.U.).

The method of prospecting by electrical instruments has been found effective and economical despite an inevitable dispersion of resources which is both caused by the parceling of water strata and the need to adapt surveying works to the slight importance of water resources involved in each area. An extension of the first survey may be contemplated, either to select a certain number of sites previously retained on the basis of other criteria, or to orient research toward more important objectives (galleries, exploitation of reserves, etc.).

The drilling method employed (hammer at the bottom of the wells?) has permitted the very economical production of exploitation wells whose flows can reach 40 cubic meters/hour; the cost per meter of tube drilled is approximately 1,100 escudos (2,400 in alluvia). In all, 101 drillings have been made, totalling more than 5,000 m.

E. Major options

In view of the present rate of collection (80,000 m3/day), the volume of resources probably available (220,000 m3/day) allows us to hope that exploitation can be markedly increased.

However, available resources will not be easily obtainable; during an initial phase, the exploitation of underground waters could be increased by 50%; in longer term, the final objective would be to double that amount.

These resources must be partly exploited by drilling and pumbing, and a program has been proposed to that effect. However, for certain islands, the digging of galleries must also be attempted; the key to success in such an enterprise will be its extensive scale (cf the Canary islands).

Reserves are too limited for any attempt of interest to exploit water springs beyond their renewal rate, except to satisfy certain limited needs that may ultimately be met by desalting sea water, especially in the drier islands.

On the other hand, a systematic search must be made to promote and increase the reconstitution of water reserves by artificial feeding operations whose effectiveness will determine, as the last resort, the limit of water resources exploitation.

Such artificial feeding operations have been proposed (by using different methods: distribution of flood waters, infiltration racks, earth barriers, surface reservoirs {Ilheu}, especially at Santiago and Maio).

The absence of floods during our mission has prevented any experimentation on a real scale but we have been able to conduct several tests of "loop" infiltration which prove that the method is viable.

These artificial feeding operations (distribution of flood waters, belong in the realm of long-term undertakings which, like the battle against erosion, are capable of rallying an under-employed population in a common struggle for survival and improved condition in the face of a definitely hostile environment.

Finally, we must emphasize that even though they could be augmented by artificial feeding, underground water resources will remain limited compared to potential needs. Their harnessing, in the framework of hydro-agricultural development, thus requires that a water policy be defined to determine priorities, provide guidance for the management of resources and ensure the conservation of these resources.

III. SANTIAGO ISLAND

The main part of research and exploiting works performed by our mission has been focused on the island of Santiago.

A general inventory of water holes demonstrates that the exploitation of underground waters in 1972 reaches the level of 30,000 m3/day, 55% of which are furnished by pumping.

The 58 operational drillings which have been completed during this mission make it possible now to obtain an additional flow of 13,000 m3/day.

Put together, the 110 drillings completed so far have also enabled us to confirm and define with accuracy the outline of the hydrogeologic map which was established at the time of our preliminary mission in 1969.

A program for developing the exploitation of underground waters has been established, area by area, for each of the 16 major drainage basins of the island; this program is based on estimate of resources. Generally speaking, it appears possible to increase resource exploitation by 19,500 m3/day, to include 3,500 on the Primary Ribeira, 2,900 on the Ribeira Seca, and 2,300 on the Ribeira dos Picos, to mention only the more important ones. This increase will allow an overall expansion of irrigated areas by approximately 500 hectares.

These figures do not take into consideration the volume of water that could be accumulated by artificial feeding; it is on this island, however, that the possibilities of recharging by these methods are called upon to play the biggest role.

On this island, moreover, control operations in the exploitation of resources are considered fundamental to guard particularly against risks of saline invasion of water-bearing strata.

IV. OTHER ISLANDS

At Boa Vista, Fogo, and S. Nicolau, during our mission we have been able to conduct a complete inventory of water holes and the exploration of some sites by the electrical survey method.

On the other five islands: Brava, Maio, Sal, Santo Antao, and S. Vincente, we only conducted quick surveys which nevertheless result in an inventory of main resources.

These studies have permitted us to define the characteristic features and potentialities of each island, establish a survey program, and determine the general outline of an exploitation program.

A. Boa Vista, Maio, Sal, and San Vincente

On these low and rather dry islands where ancient volcanic formations prevail and where underground water resources, depending on each individual case, seem to be limited to a few hundreds or, at the most, a few thousands cubic meters per day, efforts must be directed in the first place toward meeting the local populations' needs in potable water.

At Sal and S. Vincente where there already exist sea water desalinazation plants, an attempt may be made to use up reserves gradually with the attempt may be made to use up reserves gradually with the purpose of delaying the very costly expansion of these installations, and establishing standby facilities.

At Boa Vista, Maio, and Sal, which all have a touristic appeal, the building of relatively important centers is being attempted. Underground waters could then be used either for construction sites of for the planting of ornamental shrubberies.

Of all these low islands, only Maio offers the prospects of hydro-agricultural development of any importance: on the one hand, its basic rock formation seems to provide a better water-bearing stratum than can be found anywhere; on the other, this island, which is under the influence of high elevations in Santiago, receives relatively important precipitations despite its modest altitude. The distribution of flood waters there, which has already been practiced by tradition, must be made a systematic effort and would make it possible to increase overall resources, presently estimated at approximately 2,000 m2/day.

B. Brava, Fogo, Santo Antao, and San Nicolau

For these islands, which are more elevated and wetter, the prospects are naturally better. Supplemental resources available (not to include the pssible contribution of artificial feeding) are estimated to be approximately:

1. 40,000 m3/day for Santo Antao
2. 50,000 m3/day for Fogo
3. 9,000 m3/day for San Nicolau
4. 2,000 m3/day for Brava

Given the very pronounced relief of these islands and the difficulties of exploiting main water strata by drilling, the digging of galleries several kilometers long is indicated, more so than at Santiago. The objective of these undertakings is to collect at high elevations the flows of water which actually drain into the sea.

The resources thus made available will be primarily used for irrigation.

For your guidance, a certain number of gallery lay-outs have been proposed along with a program of summary exploration which it would be desirable to undertake in the first place.

Water collection by drilling may also be planned near the coastline at Fogo, in the valleys of Santo Antao, and on S. Nicolau to meet the requirements in potable water of communities which are now poorly served.

At Santo Antao, some recommendations have been made for the implementation of water collection in alluvia or the resumption of old works.

Appendix III

COMMON (PORTUGUESE) AND SCIENTIFIC NAMES OF PLANTS BY ISLAND

Grandvaux Barbosa, L. A. 1961. Subsídios para um Dicionario Utilitario e Glosario dos Nomes Vernaculos das Plantas do Arquipelago de Cabo Verde. *Estudos Agronômicos* 2(1): 1-57. Jan/Mar (Lisboa)

A

Abacateiro	*Persea americana* Mill.
Abobereira	*Cucurbita* spp.
Abobereira-de-cabaça	*Lagenaria sinceriana* (Molina) Standl.
Abobereira-de-são-castano	V. «São-castano».
Abobereira-jarda	*Cucurbita* sp.
Abrolhos	*Tribulus cistoides* L.
Acácia	*Acacia nilotica* (L.) Willd. ex Del. subsp. *indica* (Benth.) Brenan
Acácia-branca	*Moringa oleifera* Lam.
Acácia-espinheiro	*Parkinsonia aculeata* L.
Acácia-esponja	*Acacia farnesiana* (L.) Willd.
Acácia-leucena	*Leucaena glauca* (L.) Bentham.
Acácia-martins	V. «Acácia-espinheiro».
Agrião-bravo	V. n.º 6976, G. Barbosa.
Agrião-de-água	*Nasturtium officinale* R. Br.
Agrião-de-rocha	V. n.ºs 6774, 6857, 7032, G. Barbosa.
Agrião-de-rocha-lisa	V. n.ºs 7082, 7108, G. Barbosa.
Agrião-vulgar	V. «Agrião-de-água».
Agulha	*Bidens pilosa* L.
Aibeneca	V. «Avenca».
Aipo	*Melanoselinum* spp.
Alecrim	V. «Alecrim-de-portugal».
Alecrim-branco	V. n.ºs 6862, 6773, 6838, G. Barbosa.
Alecrim-bravo	*Campylanthus salsoloides* (C. Sm.) Roth.
Alecrim-bravo-de-folha-gorda	V. n.ºs 6842 e 7030, G. Barbosa.
Alecrim-de-portugal	*Rosmarinus officinalis* L.
Alface	*Lactuca sativa* L.
Alface-dos-rios	*Samolus valerandi* L.
Alfarrobeira	*Ceratonia siliqua* L.
Alfavaca	*Parietaria* spp.
Alfazema	*Lavandula* spp.
Algodoeirinho-de-cabo-verde	*Gossypium capitis-viridis* F. M. Mauer
Algodoeiro	*Gossypium hirsutum* L. (ex Watt) var. *punctatum* (Schumacher) J. Hutch., R. Sil. et S. Step.
Algodoeiro-de-folha-grande	*Gossypium barbadense* L. var. *brasiliense* (Macf.) J. Hutch., R. Sil. et S. Step.
Algodoeiro-rim	V. «Algodoeiro-de-folha-grande».
Aloés	*Aloe vera* L.
Altamires	*Chrysanthemum parthenium* (L.) Bern.
Alvatão	*Sarcostemma daltonii* Dcne.
Amendoeira	*Terminalia catappa* L.
Amendoeira-da-india	V. «Amendoeira».
Amendoim	V. «Mancarra».
Ananás	*Ananas comosus* (L.) Merr.
Anona	V. «Coração-de-boi».
Arroz-de-pardal	V. n.º 6785, G. Barbosa.
Arruda	*Ruta chalepensis* L.
Arvore-da-chama	*Spathodea nilotica* Seem.
Aveloz	V. «Sapodilha».
Avenca	*Adiantum* spp.

B

Babosa	V. «Aloés».
Bafureira	V. «Rícino».
Baginha	*Cassia occidentalis* L.

Bálsamo	*Mesambryanthemum edule* L.
Bálsamo-de-pastor	*Salvia aegyptiaca* L.
Bambu-grande	*Bambusa vulgaris* Schrad.
Bananeira	*Musa* spp.
Bananeira-anã	*Musa cavendishii* Lamb. (com diferentes variedades culturais, como: «gigante», «roberto», etc.).
Bananeira-da-terra	*Musa sapientum* L.
Bananeira-pão	*Musa paradisiaca* L.
Bananeira-prata	*Musa sapientum* L.
Barba-de-barata	*Caesalpinia pulcherrima* (L.) Sw.
Barba-de-bode	*Aristida* spp.
Barbiaca	V. «Berbilhaca-roxa».
Barneda	*Grewia villosa* Willd.
Batata	*Ipomoea batatas* Poir. (*Observação* — Tem muitas variedades cultivadas, tais como: «americana», «ponta-do-sol», «malevinho», «josé-de-abrão», etc. É a batata-doce de Portugal).
Batata-de-burro	*Boerhavia diffusa* L. ou *Mirabilis jalapa* L. (*Observação* — A primeira planta é prostrada e espontânea e a segunda é erecta e cultivada ou fugida dos quintais).
Batata-inglesa	*Solanum tuberosum* L. (*Observação* — A batata-vulgar tem em todo o arquipélago o nome de «inglesa» porque para Cabo Verde a batata mais vulgar é a batata-doce).
Baunilha-de-cheiro	*Heliotropium peruvianum* L.
Beijinho	*Cassia bicapsularis* L.
Beldroega	*Portulaca oleracea* L.
Belgata	*Cymbopogon citratus* Stapf.
Bencaiumba	V. «Caiumba».
Berbilhaca-roxa	*Datura innoxia* Will.
Beringela	*Solanum melongena* L.
Boa-madeira	V. «Sapodilha».
Bobora	V. «Aboboreira».
Boca-de-lobo-pequena	*Antirrhinum orontium* L.
Bombardeiro	*Calotropis syriaca* (S. G. Gmel) Woodson
Bonança	*Trifolium glomeratum* L.
Borracha	*Ficus* spp.
Bredo	*Amaranthus oleraceus* L. e *Amaranthus* spp.
Bredo-lâmea	V. «Beldroega».
Bredo-macho	*Amaranthus caudatus* L.
Budina	V. n.º 7148, G. Barbosa.
Bugamvila	*Bougainvillea spectabilis* Willd.
Buli	V. «Aboboreira-de-cabaça».
Burbiaca	V. «Berbilhaca».

C

Cabritagem	*Lotus* spp.
Cachacinho	V. n.ºs 7010 e 7053, G. Barbosa.
Café	*Coffea arabica* L.
Caiumba	*Desmanthus virgatus* (L.) Willd.
Cajueiro	*Anacardium occidentale* L.
Calabaceira	V. «Imbondeiro».
Calipo	V. «Calito».
Calito	*Eucaliptus* spp.
Cana-da-índia	V. «Coqueirinho-de-jardim».
Cana-de-açúcar	*Saccharum officionarum* L.
Canafístula	*Cassia fistula* L.
Canelaira	*Cinnamomum zeylanicum* Nees.
Canforeira	*Cinnamomum camphora* (L.) Nees et Eberm.
Caniço	*Arundo donax* L.
Capucha	*Physalis pubescens* L.
Carapiça	*Acanthospermum hispidum* DC.
Cardeal	*Hibiscus rosa-sinensis* L.
Cardo	*Argemone mexicana* L.
Cardo-santo	V. «Cardo».
Cariço	V. «Caniço».
Carqueja	*Limonium braunii* (Bolle) Chev. ou *Limonium* sp.
Carrapato	*Furcraea foetida* (L.) Haw.
Carsim	*Equisetum ramosissimum* Desf.
Carvalho-prateado	V. «Grevilia».
Catchiça	*Sclerocephalus arabicus* Boiss.

Cato-barse	*Hylocereus tricostatus* Britton.
Cebola	*Allium cepa* L.
Cebola-brava	V. n.os 6775 e 6976, G. Barbosa.
Cedro-do-buçaco	V. «Cedro-português».
Cedro-português	*Cupressus lusitanica* Mill.
Ceguinho	V. n.º 7042, G. Barbosa.
Cenoura	*Daucus carota* L.
Cevada	V. n.os 6902 e 6922, G. Barbosa.
Cevadilha	V. «Loendro».
Chá-de-príncipe	V. «Belgata».
Chagas	*Tropaeolum majus* L.
Chagas-velhas	*Jatropha gossypifolia* L.
Charuteira	*Nicotiana glauca* Graham.
Cherimolia	*Annona cherimolia* Mill.
Chicoria	*Cichorium intybus* L.
Cidreira	*Citrus medica* L.
Cidreirinha	*Micromeria forbesii* Benth.
Coconote	*Elaeis guineensis* Jacq.
Coelhinhos	V. n.os 7046 e 7071, G. Barbosa.
Coentro	*Coriandrum sativum* L.
Contra-bruxa-azul	*Campanula jacobaea* C. Smith (var. de flores azuis).
Contra-bruxa-branca	*Campanula jacobaea* C. Smith (var. de flores brancas).
Contra-bruxas	*Campanula jacobaea* C. Smith
Coqueirinho	*Canna indica* L.
Coqueiro	*Cocos nucifera* L.
Coração-de-boi	*Annona reticulata* L.
Coragem	*Philoxerus vermiculatus* (L.) R. Br.
Coral	*Adenanthera pavonica* L.
Corcabra	*Periploca laevigata* Ait.
Cornos-de-cabra	V. «Corcabra».
Coroa-de-rei	*(Sonchus) Drendrosonchus daltoni* Webb
Costa-branca	*Boerhavia* spp.
Couve	*Brassica oleracea* L.
Couve-alta-portuguesa	*Brassica oleracea* L. var. *acephala* DC.
Cravo-de-burro	*Tagetes patula* L.
Cur-cabra	V. «Corcabra».
Cutchim	*Leucas martinicensis* (Jacq.) R. Br.

D

Dedal	V. «Contra-bruxas».
Dem-dem	V. «Coconote».
Desfamador («difamador»)	V. n.º 6971, G. Barbosa.
Djaque-djaque	V. «Rícino».
Douradinha	*Notholaena vellea* (Ait.) Desv.
Dragoeiro	*Dracaena draco* L.

E

Elisbon	*Lavandula rotundifolia* Benth.
Ermelassima	*Salvia aegyptiaca* L.
Erva-cidreira	V. «Cidreirinha».
Erva-das-sete-sangrias	*Heliotropium undulatum* (Vahl.) Pers. var. *ramosissimum* Lehm.
Erva-de-santa-maria	V. «Erva-das-sete-sangrias».
Erva-doce	V. «Funcho».
Ervilha-de-flor	*Tecoma stans* (L.) H. B. K.
Espargos	V. «Pau-de-finado».
Espinheiro-branco	*Acacia albida* Delile
Espinho-cachupa	*Dichrostachys cineria* (L.) Wight et Arn. subsp. — *cineria* Brenan
Esponjeira	V. «Acácia-esponjeira».
Estramónio	V. «Figueira-do-inferno».
Eucalipto	V. «Calipo».

F

Farrapa	V. «Alfavaca».
Fava	V. «Feijão-fava».
Fedegosa	*Chenopodium murale* L.
Feijão-bongalão	*Vigna unguiculata* (L.) Walp.
Feijão-bongolom	V. «Feijão-bongalão».
Feijão-careca	V. «Feijão-vaca».
Feijão-de-bitcho	*Mocuna pruriens* (Medik.) DC. var. *utilis* (Wall.) Bak. ex Burk.
Feijão-de-lagartixa	V. «Feijão-de-bitcho».
Feijão-ervilha	*Cajanus cajan* (L.) Mill. sp.
Feijão-fava	*Phaseolus lunatus* L.
Feijão-lagarta	V. «Feijão-de-bitcho».
Feijão-vaca	*Lablab niger* Medik. ou *L. niger* Medik. var. *purpurescens* DC.

Feito	*Dryopteris* ssp.
Feto	V. «Feito».
Feto-folha-de-seiva	V. n.º 7021, G. Barbosa.
Figueira	*Ficus carica* L.
Figueira-brava	*Ficus gnaphalocarpa* (Miq.) A. Rich. e *F. capensis* Thunb., etc.
Figueira-da-índia	*Opuntia ficus-indica* (L.) Mill.
Figueira-de-portugal	V. «Figueira».
Figueira-do-inferno	*Datura stramonium* L.
Figueirinha	V. n.º 7076, G. Barbosa.
Flor-de-anjo	V. «Sempre-noiva».
Florinha	*Aerva persica* (Burm. f.) Merr.
Fruta-pão	*Artocarpus altilis* (Park.) Fosberg.
Funcho	*Foeniculum vulgare* Mill. var. *piperitum* (Sweet) P. Cout.

G

Gamboeira	V. «Marmeleiro». (*Observação* — É uso chamar-se «gamboa» a uma variedade cultural que dá frutos de maiores dimensões).
Giginha-muralha	V. n.º 7089, G. Barbosa.
Gilbão	V. n.ºs 6801, 6871, 6885 e 7088, G. Barbosa.
Goia	*Cyperus* spp.
Goiabeira	*Psidium guajava* Raddi.
Goia-fina	V. n.º 7105, G. Barbosa.
Goivo-branco	*Filago pyramidata* L.
Grama	*Cynodon glabratus* Steud. e *Cynodon* sp.
Groselheira	*Phyllanthus acidus* (L.) Skeels
Grevília	*Grevillea robusta* A. Cunn.
Gua	V. «Agulha».

H

Hortelã-pimenta	*Mentha piperita* L.

I

Imbondeiro	*Adansonia digitata* L.
Inhame	*Colocasia esculenta* (L.) Schott. e *Xanthosoma sagittifolium* Schott.
Intendente	*Melia azedarach* L.
Iterviná	V. n.º 6792, G. Barbosa.

J

Jamboeiro	*Eugenia jambos* L.
Junça	*Cyperus rotundus* L. e *Cyperus* spp.
Junco	V. «Junça».

L

Lacacã-grande	*Ipomoea pes-caprae* (L.) Sweet.
Lacacã-pequena	*Ipomoea* spp.
Laranjeira-azeda	*Citrus aurantifolia* (Chr.) Swingle
Laranjeira-doce	*Citrus sinensis* (L.) Osbek.
Legação	V. «Lacacã-pequena».
Leituga	V. «Serralha». (*Observação* — E outras plantas afins de seiva leitosa).
Lençol	*Gnaphalium* spp.
Liluá	V. n.º 7092, G. Barbosa.
Limeira-azeda	*Citrus aurantifolia* (Chr.) Swingle.
Limoeiro	*Citrus limonia* Osb.
Língua-de-vaca	*Echium* spp. (*Observação* — *Echium stenosiphon* Webb e *Echium hypertropicum* Webb são as plantas a que mais vulgarmente se dá a designação de «língua-de-vaca»).
Lírio	*Hymenocallis* spp.
Lírio-branco	*Iris albicans* Lge.
Loendro	*Nerium oleander* L.
Lolo	*Malvastrum spicatum* (L.) Gray.
Lolo-branco	V. n.º 6957, G. Barbosa.
Lolo-burro	V. n.ºs 6831 e 6969, G. Barbosa.
Lolo-de-cachorro	V. n.º 7151, G. Barbosa.
Lolo-estrangeiro	*Triumfetta rhomboidea* Jacq.
Lolo-fino	V. n.º 7134, G. Barbosa.
Lolo-preto	*Sida* spp.
Losna	*Artemisia gorgonum* Webb
Loureiro	*Laurus nobilis* L.
Lúcia-lima	*Aloysia triphylla* (L'Her.) Britt.

M

Maçã . . . . . V. «Macieira».
Macela . . . . . *Odontespermum* spp. (V. n.º 6761, G. Barbosa).
Macieira . . . . . *Malus sylvestris* (L.) Mill.
Madressilva . . . . . *Lonicera confusa* DC.
Malagueta . . . . . *Capsicum frutescens* L.
Malpica . . . . . *Achyranthes aspera* L.
Malva . . . . . *Lavatera cretica* L.
Malvinha . . . . . V. n.º 7068, G. Barbosa.
Mamão . . . . . *Mammea americana* L.
Mamona . . . . . V. «Rícino».
Mancarra . . . . . *Arachis hypogaea* L.
Mandioqueira-amarga *Manihot esculenta* Grantz.
Mandioqueira - borracha . . . . . *Manihot glaziovii* Mull. Arg.
Mandioqueira-doce . . *Manihot dulcis* Pax = *Manihot utilissima* Pohl. var. *dulcis* Baill. (*Observação*—Desta mandioca observaram-se bastantes variedades cultivadas).
Mangirona . . . . . V. n.º 6855, G. Barbosa.
Manqueira . . . . . *Mangifera indica* L.
Manhã-de-páscoa . . V. n.º 6986, G. Barbosa.
Mão-na-pé (Mão-no-pé) . . . . . V. «Carapiça».
Maracujá-grande . . . *Passiflora quadrangularis* L.
Maracujá-pequeno . . *Passiflora edulis* Sims. (*Observação* — Esta espécie é rara).
Maravilhas . . . . . *Mirabilis jalapa* L.
Marcela-lenha . . . . . V. n.º 6836, G. Barbosa.
Marcelinha . . . . . V. n.ºs 6780, 6892, 6923 e 7169, G. Barbosa.
Marcelinha-de-folha-larga . . . . . V. n.ºs 6925 e 7023, G. Barbosa.
Marcelinha-galega . . *Pegolettia senegalensis* Cass.
Marmeleiro . . . . . *Cydonia oblonga* Miller
Marmolano . . . . . *Sideroxylon marmulana* C. Smith.
Marquinha . . . . . *Desmodium tortuosum* (Sw.) DC.
Marroio . . . . . *Marrumbium vulgare* L.
Marroio-de-França . . V. «Marroio».
Mata-piolhos . . . . . V. «Piorrinho».
Mata-pulgas . . . . . *Polygonum serrulatum* Lag.
Mataquim . . . . . V.«Boca-de-lobo-pequena».
Mata-sede . . . . . V. «Seião».
Matinho . . . . . *Helianthemum gorgoneum* Webb
Matinho-de-agulhas . *Fagonia cretica* L.
Matinho-de-rocha . . . V. n.º 6883, G. Barbosa.
Matinho-de-sargaço . *Frankenia* spp. (*Observação* — Especialmente *F. ericifolia* C. Smith).
Mato-botão . . . . . *Lytanthus amygdalifolius* (Webb) Wettst.
Mato-branco . . . . . V. «Salva-vidas».
Mato-contrário . . . . . V. n.º 6730, G. Barbosa.
Mato-de-engodo . . . *Paronychia illecebroides* (C. Smith) Webb
Mato-gonçalves . . . . *Plumbago zeylanica* L.
Matona . . . . . *Sinapidendron glaucum* Schmidt
Melancia . . . . . *Citrullus vulgaris* Schrad.
Melancia-brava . . . . *Citrullus colocynthis* Schrad.
Melão . . . . . *Cucumis melo* L.
Milho . . . . . *Zea mays* L.
Monda-de-cabeça (?) V. n.º 7155, G. Barbosa.
Moringa . . . . . V. «Acácia-branca».
Morroio . . . . . V. «Marroio».
Mostarda-brava . . . . *Sinapidendron* spp.
Mostarda-preta . . . . *Brassica nigra* (L.) Koch.
Murroio . . . . . V. «Marroio».

N

Nabo . . . . . *Brassica rapa* L.
Não-é-palha-vassoura *Rhynchelytrum villosum* (Parl.) Chiov. *R. brevipilum* (Hack.) Chiov. ou *R.* spp.
Nespereira . . . . . *Eriobotrya japonica* Lindl.
Nespereira-do-japão . V. «Nespereira».

O

Olho-de-boi . . . . . *Solanum fuscatum* Jacq.
Olho-de-vaca . . . . . V. «Melancia-brava».
Oliveira . . . . . *Olea europaea* L. (var. *maderensis* Lowe) ?
Orelha-de-rato . . . . *Dicliptera verticillata* (Forsk.) C. Clwst.
Ouri . . . . . *Caesalpinia bonduc* (L.) Roxb.
Ovos-de-rato-pequeno *Crotalaria senegalensis* (Pers.) Bacle ex DC.

P

Palha-boi . . . . . *Eleusine indica* Gaertn.
Palha-branca . . . . . *Boerhavia* spp.
Palha-canela . . . . . V. n.º 6870, G. Barbosa.

Palha-cavalo	V. n.º 7034, G. Barbosa.
Palha-da-guiné	*Hyparrhenia hirta* (L.) Stapf et *Hyparrhenia* spp.
Palha-de-água	V. n.os 6820 e 7039, G. Barbosa.
Palha-de-vassoura	*Tricholaena teneriffae* (L.) Parl.
Palha-engodo	V. «Mato-de-engodo».
Palha-fina	*Aristida adscensionis* L., *A. cardosoi* P. Coutinho, *Aristida* spp.
Palha-governo	V. «Palha-mafe».
Palha-grama	V. n.º 6972, G. Barbosa.
Palha-grossa	V. n.º 6972, G. Barbosa.
Palha-grossa-branca	V. n.os 6783, 6790 e 6846, G. Barbosa.
Palha-ladeira	*Andropogon gayanus* L.
Palha-larga	V. n.º 6985, G. Barbosa.
Palha-limão	V. «Belgata».
Palha-mafe, ou Palha-governo	V. n.os 7051 e 7149, G. Barbosa.
Palha-mafó («porcaria»)	V. n.º 7013, G. Barbosa.
Palha-negra	V. n.º 6770, G. Barbosa.
Palha-salgadinha	V. n.º 6777, G. Barbosa.
Palha-salda	*Coronopus didymus* (L.) Sm.
Palha-saldrinha	*Andrachne telephioides* L.
Palha-teixeira	*Chenopodium ambrosioides* L.
Palha-trigo	V. n.os 6901 e 7065, G. Barbosa.
Palha-vassoura. «Não é»	V.«Não-é-palha-vassoura».
Palha-vermelha	*Elyonurus royleanus* Nees ex A. Rich.
Palmeira-do-azeite	V. «Coconote».
Palmeira-do-saará	*Phoenix dactylifera* L.
Papaeira	*Carica papaya* L.
Papoila-de-cabo-verde	*Papaver gorgoneum* P. Cout.
Papoila-de-portugal	*Papaver rhoeas* L.
Pau-de-finado	*Asparagus scoparius* Lowe
Pé-de-boi	V. «Palha-boi».
Pega-saia	*Setaria verticillata* (L.) Beauv.
Pepino	*Cucumis sativus* L.
Pepino-bravo	*Cucumis ficifolius* A. Rich.
Pessegueiro	*Persica vulgaris* Mill.
Piloto	*Conyza crispa* (Pour.) P. Coutinho
Pimentão	V. *Capsicum*
Pimenteira-bastarda	*Schinus molle* L.
Pimento	V. *Capsicum*
Pinha	*Annona squamosa* L.
Pinhão-azedo	*Annona muricata* L.
Pinho	V. «Pinha».
Piolho-ledo	*Aizoon canariense* L.
Piorninho	*Cytisus stenopetala* (Webb et Barth.) Webb.
Piorrinho	*Ajuga iva* Schreb.
Piripiri	V. «Malagueta».
Piteira-de-cabo-verde	V. «Carrapato».
Poeijos	*Mentha pulegium* L.
Poilão	*Ceiba pentandra* (L.) Gaertn.
Purgueira	*Jatropha curcas* L.

Q

Quiabos	*Abelmoschus esculentos* (L.) Moench.
Quina	*Chinchona succirubra* Pav. ex Klotz.

R

Rabo-de-asno	*Heteropogon contortus* (L.) Roem et Sch.
Rabo-de-gato	*Aristida* spp.
Rabo-de-gato-grande	V. n.º 7172, G. Barbosa.
Raia-saia	*Forskohlea procridifolia* Webb
Repolho	*Brassica oleracea* L. var. *capitata* DC.
Ricino	*Ricinus communis* L.
Risco	*Lavandula stricta* Delile
Roma-de-França	V. «Marroio».
Romãzeira	*Punica granatum* L.
Roseira	*Rosa* spp.
Rosaquina	*Clerodendron fallax* Lindl.
Rosfira	V. «Roseira».
Rosmaninho	*Lavandula dentata* L.

S

Sabão-de-feiticeira	*Celsia insularis* Murbeck.
Sabão-de-lagartixa	V. «Sabão-de-feiticeira».
Saião	V. «Seião».
Salsa	*Petroselinum crispum* (L.) Nym
Salva-vidas	*Melhania ovata* (Cav.) Spreng.
Santa-clara	*Abrus precatorius* L.
Santagem	V. «Tanchagem».
São-castano	*Momordica charantia* L.
Sapodilha	*Sapindus saponaria* L.
Sarralha	V. «Tanchagem».
Seião	*Aeonium gorgoneum* Schm.

Seilão . . . . . V. «Seilão».
Selga . . . . . *Beta procumbens* C. Sm.
Sempre-noiva . . . . . *Lochnera rosea* (L.) Reich.
Sene . . . . . *Cassia italica* (Mill.) Lam.
Serralha . . . . . *Sonchus oleraceus* L.
Sete-sangrias . . . . . V. «Erva-das-sete-sangrias».
Soca . . . . . V. n.º 6821, G. Barbosa.

T

Tabaibo . . . . . V. «Figueira-do-inferno».
Tábua . . . . . *Nidorella varia* (Webb) C. Sm.
Tabuinha . . . . . V. «Tábua».
Taliano . . . . . *Trichodesma africanum* (L.) R. Br.
Tamareira . . . . . *Phoenix* spp.
Tamargueira . . . . . V. «Tarrafe».
Tamarindo . . . . . *Tamarindus indica* L.
Tanchagem . . . . . *Plantago major* L.
Tarraial . . . . . V. «Tarrafe».
Tarrafe . . . . . *Tamarix gallica* L. var. *canariensis* (Willd.) Pitard.
Tinta . . . . . *Indigofera tinctoria* Webb
Tinta-de-macaco . . . *Basella cordifolia* Lam.
Tira-olho . . . . . V. «Tortolho».
Tomateiro . . . . . *Lycopersicum esculentum* Mill.
Tomatinho . . . . . *Lycopersicum cerasiforme* Dunal
Tortilho . . . . . V. «Tortolho».
Tortolhinho . . . . . V. «Coroa-de-rei».
Tortolho . . . . . *Euphorbia tuckeyana* Steud.
Trepadeira . . . . . *Lantana camara* L.
Trevina . . . . . V. «Arroz-de-pardal».
Trevina-macho . . . . *Phyllanthus* spp.
Trevinho («crioulo» Tribinho) . . . . . *Oxalis corniculata* L.
Trevo . . . . . *Trifolium glomeratum* L.
Tribinho «em crioulo» V. «Trevinho».
Trigo . . . . . V. n.º 7100, G. Barbosa.
Tulipeira-do-gabão . . V. «Árvore-da-chama».

U

Unha-de-gato . . . . . *Doxantha unguis-cati* Rehd.
Unha-de-gato-bastarda . . . . . *Centaurea melitensis* L.
Uri . . . . . V. «Ouri».
Urseia . . . . . *Rocella tinctoria* DC., *Rocella* spp., etc.
Urtiga . . . . . *Dryopteris parasitica* (L.) O. Kze
Uva . . . . . V. «Vinha».
Uva-de-macaco . . . . *Phytolacca americana* L.
Uva-de-santa-maria . *Solanum nigrum* L.
Uva-madeira . . . . . V. «Capucha».

V

Vinha . . . . . *Vitis vinifera* L.
Vista . . . . . *Cyperus* spp. (*C. polystachyus* R. Br.), etc.
Viúva . . . . . V. «Intendente».

Z

Zambujeiro . . . . . V. «Oliveira».
Zambujo . . . . . V. «Oliveira».
Zimbrão . . . . . *Ziziphus mauritiana* Lam.
Zimbrão-da-índia . . . *Ziziphus jujuba* Mill.

3.2 — LISTA DOS NOMES VERNÁCULOS DA ILHA DE SÃO VICENTE

A

Abrolhos . . . . . *Tribulus cistoides* L.
Abobreira-de-cabaça *Lagenaria sinceraria* (Mol.) Standl.
Acacia-americana . . *Prosopis chilensis* (Mol.) St.
Acacia-espinheira . . . V. «Acácia-martins».
Acacia-martins . . . . *Parkinsonia aculeata* L.
Aquilha . . . . . *Bidens pilosa* L.
Ainda-não-tem . . . . *Umbelliferae* (V. n.º 6723, G. Barbosa).
Alfazema . . . . . *Labiatae* (V. n.º 6650, G. Barbosa).
Algodoeira . . . . . *Gossypium hirsutum* L. (ex Watt) var. *punctatum* (Schum.) J. Hutch., R. Sil. et S. Step.
Aloés . . . . . *Aloe vera* L.
Alvatão . . . . . *Sarcostemma daltonii* Dcne.
Amendoeira . . . . . *Terminalia catappa* L.
Arroz-de-pardal . . . . V. n.º 6636, G. Barbosa.
Avenca . . . . . *Adiantum* spp.

B

Babosa . . . . . V. «Aloés».
Barba-de-bode . . . . *Aristida* spp.
Batata-doce . . . . . *Ipomoea batatas* Poir.

Baguinha	*Cassia occidentalis* L.
Berbilhaca	V. «Burbiaca».
Bombardeiro	*Calotropis syriaca* (S. G. Gmel) Woodson
Bredo	*Amaranthus* spp.
Bugamvila	*Bougainvillea spectabilis* Willd.
Burbiaca	*Datura metel* L. e *Datura* spp.

C

Cabrileia-do-campo	V. n.º 6740, G. Barbosa.
Camacho	*Lycopersicum ceraciforme* Dunal.
Cardo	*Argemone mexicana* L.
Cardo-santo	V. «Cardo».
Carrapato	*Furcraea foetida* (L.) Haw.
Casuarina	*Casuarina equisetifolia* L.
Catchiça	*Sclerocephalus arabicus* Boiss.
Cevadilha	V. «Loendro».
Chagas-velhas	*Jatropha gossypifolia* L.
Charuteira	*Nicotiana glauca* (Grham)
Couve	*Brassica oleracea* L.

D

Djé-djé	*Hyonurus royleanus* Nees ex A. Rich.

E

Erva-das-sete-sangrias	*Heliotropium undulatum* (Vahl.) Pers.
Espinheira	*Acacia nilotica* (L.) Willd. ex Del. subsp. *indica* (Benth.) Brenan

F

Fedegosa	*Chenopodium murale* L., ou também *Cassia occidentalis* L.
Feijão-bengalon	*Vigna unguiculata* (L.) Walp.
Feijão-ervilha	*Cajanus cajan* (L.) Millsp.
Feijão-pedra-branco	*Lablab niger* Medik var. *albiflorus* (DC.).
Felga	*Rumex* spp.
Figueira-de-goa	*Ficus religiosa* L.
Flor-de-anjo	V. «Sempre-noiva».
Florinha	*Aerva persica* (Burm. f.) Merr.
Folha-branca	*Boerhavia* spp. (*B. diffusa* L., etc.)

G

Grama	*Cynodon* sp.
Groselheira	*Phyllanthus acidus* (L.) SK.

I

Intendente	*Melia azedarach* L.

J

Junco	*Cyperaceae* (especialmente *Cyperus* spp.).

L

Língua-de-vaca	*Echium stenosiphon* Webb
Lisbon	V. n.º 6684, G. Barbosa.
Loendro	*Nerium oleander* L.
Lolo	*Malvastrum spicatum* (L.) A. Gray.
Lolo-branco	*Melhania ovata* (Cav.) Spreng.
Lolo-preto	*Sida urens* L. ou *Sida* spp.

M

Macela	V. «Marcela».
Malpica	*Achyranthes aspera* L.
Malva	*Lavatera cretica* L.
Mandioca-doce	*Manihot dulcis* Pax
Mangueira	*Mangifera indica* L.
Mão-no-pé	V. «Mona-pé».
Marcela	*Odontospermum daltonii* Webb
Mato-branco	V. «Salva-vidas».
Mona-pé («Mão-no-pé»)	*Alternanthera repens* (L.) O. Kuntze.
Mostarda	*Brassica nigra* (L.) Koch.

P

Palha-branca	*Gramineae* (V. n.ºs 6712 e 6732, G. Barbosa).
Palha-vermelha	V. «Djé-djé».
Pau-de-vinho	V. n.º 6729, G. Barbosa.
Pega-saia	*Setaria verticillata* (L.) P. Beauv.
Pimenteira	*Schinus molle* L.
Piorno	V. n.º 6685, G. Barbosa.
Purgueira	*Jatropha curcas* L.

Q

Quintinha ..... *Leguminosae* (V. n.º 6892, G. Barbosa).

R

Rabo-de-asno ..... *Heteropogon contortus* (L.) Roem et Sch.
Rabo-de-gato ..... *Aristida* spp., etc.
Rapa-seia ..... *Forskohlea procridifolia* Webb e *Forskohlea* sp.
Ricino ..... *Ricinus communis* L.
Risco ..... *Lavandula stricta* Del.
Risque ..... V. «Risco».
Roseia ..... *Rocella* spp.

S

Salva-vidas ..... *Melhania ovata* (Cav.) Spreng.
Selga ..... *Beta procumbens* C. Sm.
Sementinha ..... *Desmanthus virgatus* (L.) Willd.
Sempre-noiva ..... *Lochnera rosea* (L.) Reichb.
Sene ..... *Cassia italica* (Mill.) Lam.
Serralha ..... *Sonchus* sp.
Sete-sangrias ..... V. «Erva-das-sete-sangrias».

T

Tinta ..... *Indigofera tinctoria* L. et aff.
Tomateiro ..... *Lycopersicum esculentum* Mill.
Trepadeira ..... *Lantana camara* L.

U

Urseia ..... V. «Roseia».

Z

Zimbrão ..... *Ziziphus mauritiana* Lam.

3.3 — LISTA DOS NOMES VERNÁCULOS DA ILHA DE SANTA LUZIA

A

Arroz-de-pardal .... V. n.º 7197, G. Barbosa.

B

Beldroega ..... *Portulaca oleracea* L.
Bugamvila ..... *Bougainvillea spectabilis* Willd.

C

Cabritagem ..... *Lotus* spp.
Cardo ..... *Argemone mexicana* L.
Catchiça ..... *Sclerocephalus arabicus* Boiss.
Charuteira ..... *Nicotiana glauca* Graham.

G

Grama ..... *Cynodon* sp.

L

Lolo-branco ..... V. n.º 7213, G. Barbosa.

M

Marcelinha ..... *Compositae* (V. n.º 7186, G. Barbosa).
Mato-de-engodo ... *Frankenia* spp.
Mato-esclame ..... V. n.º 7126, G. Barbosa.

P

Palha-engodo ..... V. n.º 7189, G. Barbosa.
Purgueira ..... *Jatropha curcas* L.

R

Ricino ..... *Ricinus communis* L.
Risco ..... *Lavandula stricta* Delile.

S

Salgadinha ..... *Gramineae* (V. n.os 7199 e 7208, G. Barbosa).
Serralha ..... *Sonchus* spp.

T

Tailano («italiano») . *Trichodesma africanum* (L.) R. Br.
Tamareira ..... *Phoenix* (*atlantida* A. Chev.)
Tamarindo ..... *Tamarindus indica* L.

3.4 — LISTA DOS NOMES VERNACULOS DA ILHA DE SÃO NICOLAU

A

Acacia-martins .... *Parkinsonia aculeata* L.
Agrião ..... *Linaria* spp. (V. n.º 7282, G. Barbosa).
Aipo ..... *Umbellifera* (V. n.º 7231, G. Barbosa).
Alcatrão ..... *Sarcostemma daltonii* Dcne.
Alecrim-brave ..... *Campylanthus salsoloides* (C. Sm.) Roth.
Alfarrobeira ..... *Ceratonia siliqua* L.
Algodoeiro ..... *Gossypium hirsutum* L. (ex Watt) var. *punctatum* (Schumacher) J. Hutch., R. Sil. et S. Step.
António-coceira .... *Dalechampia scandens* L.

B

Bananeira-anã .... *Musa cavendishii* Lamb
Barba-de-barata ... *Caesalpinia pulcherrima* (L.) Sw.
Barba-de-bode .... *Gramineae* (V. n.º 7243, G. Barbosa).
Barbosa ..... *Aloe vera* L.
Barnadeira ..... *Grewia villosa* Willd.
Batata-de-oze ..... V. n.º 7236, G. Barbosa.
Batata-inglesa ..... *Solanum tuberosum* L.
Bombardeiro ..... *Calotropis syriaca* (S. G. Gmel) Woodson
Bredo ..... *Amaranthus oleraceus* L. et *Amaranthus* spp.

C

Cabritagem ..... *Lotus* spp.
Cabritagem-redonda . *Lotus* sp. (V. n.º 7234, G. Barbosa).
Café ..... *Coffea arabica* L.
Calabaceira ..... V. «Imbondeiro».
Cana-de-açúcar .... *Saccharum officinarum* L.
Cardo ..... *Argemone mexicana* L.
Cebola ..... *Allium cepa* L.
Cevadilha ..... V. «Loendro».
Charuteira ..... *Nicotina glauca* Graham.
Corcabra ..... *Periploca laevigata* Ait.
Cravo-branco ..... *Tagetes patula* L.

D

Dedai ..... *Campanula jacobaea* C. Sm.
Dormideira-de-galinha *Asparagus scoparius* Lowe
Douradinha ..... *Notholaena vellea* (Ait.) Desv.

E

Entre ..... *Umbelliferae* (V. n.ºs 7229 e 7267, G. Barbosa).
Erva-cidreira ..... *Micromeria forbesii* Benth.
Espinheiro-preto .... *Acacia farnesiana* (L.) Willd.
Espinho-cachupa ... *Dichrostachys cineria* (L.) Wight et Arn. subsp. — *cineria* Brenan

F

Fedegoso ..... V. «Tanchagem».
Figueira-brava .... *Ficus* spp.
Freira ..... *Lantana camara* L.

G

Goiabeira ..... *Psidium guajava* L.

I

Imbondeiro ..... *Adansonia digitata* L.
Intendente ..... *Melia azedarach* L.

J

Jardineira ..... *Cassia bicapsularis* L.

L

Lacacã-grande .... *Ipomoea pes-caprae* (L.) Sweet.
Lapadeira ..... *Mentzelia aspera* L. (V. n.º 7283, G. Barbosa).
Latadinha ..... *Oxalis corniculata* L.
Leituga ..... *Sonchus* spp.
Lingua-de-vaca .... *Echium* spp.
Lingua-de-vaca-branca ..... *Forskohlea procridifolia* Webb e *Forskohlea* spp.
Loendro ..... *Nerium oleander* L.
Loio-preto ..... *Sida* spp.

M

Macela ..... *Odontospermum* spp.
Malpica ..... *Achyranthes aspera* L.

Mane-gatim	*Acanthospermum hispidum* DC.
Mangueira	*Mangifera indica* L.
Marcela	V. n.º 7238, G. Barbosa.
Marmulano-de-terra	*Lavandula stricta* Delile
Matinho-de-lisboa	*Ageratum conysoides* L.
Mato-gonçalves	*Plumbago zeylanica* L.
Mostardinha	*Sinapidendron* spp.

O

Olho-de-boi	*Solanum fuscatum* Jacq.
Ouri	*Caesalpinia bonduc* (L.) Roxb.

P

Palha-botão	*Labiatae* (V. n.º 7274, G. Barbosa).
Palha-branca	*Gramineae* (V. n.º 7245, G. Barbosa).
Palha-de-água	V. n.º 7233, G. Barbosa.
Papoila	*Papaver* (V. n.º 7279, G. Barbosa).
Papoila-de-portugal	*Papaver rhaeas* L.
Pega-saia	*Setaria verticillata* (L.) P. Beauv.
Piloto	*Erigeron bonariensis* L.
Piolho-do-campo	V. n.º 7248, G. Barbosa.

R

Romãzeira	*Punica granatum* L.

S

São-caetano	*Momordica charantia* L.
Sementinha-da-praia	*Desmanthus virgatus* (L.) Willd.
Sementinha-da-terra	*Leucaena glauca* (L.) Benth.
Sempre-noiva	*Lochnera rosea* (L.) Reichb.
Sempre-noivinha	*Alyssum maritimum* (L.) Lamk. var. *intermedia* (Webb) Chev.
Sem-trabalho	*Malvaceae* et *Sterculiaceae* (várias). (V. n.ºs 7218 e 7227, G. Barbosa).
Serralha	*Sonchus* spp.
Soca-mansa	*Heteropogon contortus* (L.) Roem. et Sch.

T

Taliano	*Trichodesma africanum* (L.) R. Br.
Tamareira	*Phoenix* spp.
Tamarindo	*Tamarindus indica* L.
Tanchagem	*Plantago major* L.
Tinta	*Indigofera tinctoria* L. et affin.
Tomateira	*Lycopersicum esculentum* Mill.
Tomatinho	*Lycopersicum cerasiforme* Dunal
Tortolho	*Euphorbia tuckeyana* Steud.
Trevinha	*Oxalis corniculata* L.

U

Uri	V. «Ouri».
Uva-de-santa-maria	*Solanum nigrum* L.

Z

Zimbrão	*Ziziphus mauritiana* Lam.

3.5 — LISTA DOS NOMES VERNÁCULOS DA ILHA DO SAL

A

Acácia-americana	*Prosopis chilensis* (Molina) Stuntz
Amendoeira	*Terminalia catappa* L.

B

Bela-sombra	*Thespesia populnea* (L.) Soland. ex Corr.
Bombardeiro	*Calotropis syriaca* (S. G. Gmel) Woodson.
Borracha	*Euphorbia tirucalli* L.

C

Cabritagem	V. «Cafetagem».
Cafetagem	*Lotus* spp.
Campa	*Caylusea hexagyna* (Forsk.) H. L. Green
Carrapito	V. n.º 7343, G. Barbosa.

D

Djelunga	*Amaranthaceae* (V. n.º 7332, G. Barbosa).

E

Erva-de-santo-antónio	V. n.º 7327, G. Barbosa.
Espargo	*Asparagus scoparius* Lowe
Espinheiro	*Acacia nilotica* (L.) Willd. ex Del. subsp. *indica* (Benth.) Brenan

F

Feijão-pedra	*Lablab niger* Medik.
Feninga	V. «Funinga-branca».
Florinha	*Aerva persica* (Burm. f.) Merr.
Funinga-branca	*Suaeda volkensi* C. B. Clarke.
Funinga-preta	*Arthrocnemum glaucum* (Delile) Ung.-Sternb.
Furtaragem	V. n.º 7328, G. Barbosa.

G

Grama	*Cynodon* spp.

L

Losna	*Compositae* (V. n.º 7335, G. Barbosa).

M

Maipica	*Gramineae* (V. n.º 7344, G. Barbosa).
Malva	*Abutilon pannosum* (Forst.) Schl.
Matinho-de-água	V. n.ºs 7323 e 7347, G. Barbosa.
Matona	*Sinapodendron glaucum* Schmidt
Mogna	V. n.º 7333, G. Barbosa.
Murraça-branca	V. «Funinga-branca».

P

Palha-de-talo	V. n.º 7348, G. Barbosa.
Palha-sisuda	*Gramineae* (V. n.º 7318, G. Barbosa).

R

Rabo-de-asno	*Heteropogon contortus* (L.) Roem et Sch.

S

Sene	*Cassia italica* (Mill.) Lam.
Serralha	*Sonchus* sp.
Sisuda	*Gramineae* (V. n.º 7346, G. Barbosa).
Soca	*Gramineae* (V. n.ºs 7337 e 7355, G. Barbosa).

T

Tarafina	V. «Funinga-preta».
Tarrafe	*Tamarix gallica* L. var. *canariensis* (Willd.) Pitard.
Ticome-se	*Sesbania pachycarpa* DC.
Toranjeira	*Citrus maxima* (Burm.) Merr. e *C. paradisi* Macf.

Z

Zimbrão	*Ziziphus mauritiana* Lam.

Appendix IV

PLANT DISEASES IN CAPE VERDE BY CAUSATIVE AGENT

List of plant diseases caused by mites, insects, nematodes, and fungi in the Cape Verde archipelago, according to Pires (1977). Arranged by causative agent.

Mites	
Tetranychus cinnabarinus	Pigeonpea, other beans
Polyphagotarsonemus latus	White potato, sweet potato, fruit tree seeds
Tetranychus urticae	Pigeonpea, sugarcane
Eutetranychus orientalis	Papaya
Homoptera	
Fulgoroidae	
Peregrinus maidis	Wild grasses
Cicadoidea	
Cicadulina sp.	Transmits maize streak disease virus
Empoasca sp.	Pigeonpea
Aleyrodoidea	
Bemisia tabaci	Transmits virus to white potato, sweet potato, and bean species
Aleyrodes proletella	Brassica sp.
Aphidoidea	
Aphididae	
Myzus persicae	Brassica sp., cauliflower
Pentalonia nigranervosa	Banana and inhame
Aphis craccivora	Phaseolus sp., cowpea, pigeonpea, and portulaca (purslane), transmitting virus
Taxoptera aurantii	Citrus
Brevicoryne brassicae	Crucifers, including cauliflower
Aphis gossypii	Cotton and cucurbits
Rhapalosiphum maidis	Maize
Coccoidea	
Monophlebidae	
Icerya purchasi	Pigeonpea, oranges and other citrus

Dysmicoccus boninsis	Sugarcare
Dysmicoccus brevipes	Ananas (sweet or soursop)
Phanococcus citri	White potato, coffee, cucurbits
Coccidae	
Coccus hesperidum	Papaya
Coccus viridis	Coffee, guava, mango, tropical almond
Cercoplastes sp.	Mango
Hemiberlesia latanice	Grapes, banana, dates, pigeonpea
Fioribia florinice	Tropical almond, coconut, avocado, mango
Phenacapsis sp.	Sugarcane, coconut, dates
Lepidosaphes beckii	Citrus
Pinnapsis strachani	Pigeonpea, cassava, tomato, beans, sweet potato
Aonidomytilus albus	Cassava
Thysanoptera	
Thripidae	
Heliothrips haemorrhoidalis	Avocado
Thrips tabaci	Garlic, onion
Coleoptera	
Curculionidae	
Cylas puncticollis	Sweet potato
Cosmopolites sordidus	Banana
Lepidoptera	
Papilionidae	
Papilio demodocus	Citrus
Lycaenidae	
Lycaenidae sp.	Pigeonpea and other legumes
Tortricidae	
Cryptophlebia peucotreta	Green papper, maize, avocado
Plutella xylostella	Crucifers, including cauliflower
Cosmopteryx sp.	Common beans and dolichus, P. lunatus

Pyrolidae	
Maruca testularis	Pigeonpea
Etiella zinckenella	Pigeonpea
Hellula undalis	Cauliflower and other crucifers
Brachmia convolvuli	Sweet potato
Noctuidae	
Heliothosis armigera	Tomato, pepper, white potato, beans, pigeonpae, sunflower, and probably cotton
Spodoptera littoralis	Peanut, cauliflower, and various table legumes in irrigated agriculture
Sesamia nonagrioides	Sugarcane, maize
Agrotis segetum	Beans, cowpea, onion
Diptera	
Tephritidae	
Dacus ciliatus	Cucurbits
Ceratitis capitata	Coffee, apple, mango, citrus
Melanagromyza coffaea	Coffee
Orthoptera	
Acrididae	
Oedaleus senegalensis	Ubiquitous and omnivorous
Anacridium wernerellum	
Schistocerca gregaria	Important but lesser damage generally, omnivorous and concentrating
Lacusta migratoria migratorioides	
Ailopus, Acrotylus, Prygomorpha sp.	Less damaging and less important locusts
Heteroptera	
Pentatomidae	
Nezara viridula	Maize, garden and truck crops, fruit trees
Nematoda	
Meloidogyne sp.	Papaya, banana, sugarcane
Rotylenchulus sp.	Market or truck garden vegetables, fruits

Helycotylenchus sp. probably multicinctus	Banana
Pratylenchus sp.	Sugarcane
Xiphinema sp.	Tomato
Cryptogamae	
Oidium (mildew)	Mango, papaya, tobacco, grapes, garlic, carrot, cucurbits, allspice, tomato, table legumes
Smut organisms	Grow in honeydew of Coccus viridis on coffee, citrus, and grapes
Fungus diseases	Anthracnose of coffee, tropical almond, tomato Cercosprosis of mango, cassava, coffee False leaf rust of coffee Citrus gummosis Leaf curl of tomato

Viruses

Sugarcane mosaic, on corn and many of the forage grasses spread by the insect Rhopalosiphum maydis.

Sugarcane streak, also on corn and spread by leafhoppers or planthoppers. An as yet undetermined cirus disease causing stunting or dwarfing of the stalks and a vivid reddish orange coloration of the meristematic zones of the shoots and a general gedeneration of the variety.

Corn viruses: The following corn viruses are found in the archipelago: Sugarcane Streak Virus; Maize Streak Disease Virus; Maize Mosaic Virus or Maize Stripe Virus; and Maize Fine Line Virus.

Coconut fungus diseases: Coconuts are attacked by two fungi: Podaxon sp. and Thielaviopsis paradoxe.

Mammals

The chief and usually the only mammal causing damage is the rat. Of course, cattle goals, sheep, donkeys, mules, and burros, as well as dogs and cats, can, on occasion, cause damage to growing plants and grain in storage.

The following insets can harm grain in storage, whether or not it was grown in Cape Verde: Sitophilus, Ephestia, Tribolium, and Bruchides species.

Appendix V

CROPS WORTHY OF POSSIBLE EXPLOITATION OR REJUVENATION IN CAPE VERDE

COCONUT

Spontaneous stands grow along the beaches and are planted in oases where springs or wells are located. Each tree produces only a few nets and these are small. Evidently there is only one cultivar except for one planting of a cultivar that looked like the Malay Dwarf, an improved variety that grows much shorter, produces many nuts, and is resistant to many of the diseases that are decimating stands worldwide. Besides the nutritious meat high in oil, this palm produces good thatch, coir for rpoes, shell for making charcoal or for direct fuel, and logs for fuel and for structural uses. The climatic conditions in the islands are optimal for drying the coconut meat into copra for later use as a source of food, feed, or oil. Future plantings should be made only on areas that can be irrigated as the crop needs about a meter of water from whatever source. The palms cause a light, broken shading of the soil and other crops can be interplanted into palm stands, such as banana.

DATE PALM

In areas almost completely devoid of rainfall, but where irrigation water is available, the date palm could be experimented with, but artificial pollination techniques would have to be practiced to assure fruit formation. The date palm has many other valuable uses in addition to fruit production. Dates grew on Sal Island during the 18th Century.

SPINELESS CACTUS

Sources of this plant should be located and exploited to provide planting material for experiments toward providing animal feed and ground cover.

BAMBERRA GROUNDNUT

This legume for the table and for stock feed from the stalks and leaves grows well in similar climates on mainland Africa, sometimes producing 0.5 mt/ha of very nutritious fruit (nuts similar to cowpeas or peanuts). A collection should be begun and tested in areas of adaptation at one of the agricultural experiment stations after they are established.

CASHEW

While some trees exist on Fogo, expansion of these plantings could be made as water becomes available from ground water sources. As incomes increase the need for cashew nuts to satisfy worldwide requirements increase. The dry climate on Fogo seems to satisfy the needs of the crop.

CHICKPEA

Although a few plantings have been made in Cape Verde, this table legume should be expanded in culture after collections are made and tested by the MDR at the experiment stations to be established throughout the islands. The climatic requirements of this crop could be well satisfied in the RCV. This includes drought resistance and a cool, dry climate, as well as the need for light, well aerated soils.

AVOCADO

Some good trees exist in the irrigated areas but there is the need of many more plantings to furnish fruit for everyone. Budded or grafted stocks are needed so that the trees will produce at a much earlier age, and will have large, quality fruits for home use or in the marketplace. The avocado is a very nutritious fruit and would add variety to the cachupa-based diet of the people.

FIBERPLANTS

Furcraea foetida (*F. gigantea*) a sisal like fiber plant grows in the highlands of the islands in very arid conditions. Plants at the highest elevations form viviparous plantlets that fall from the large, tall inflorescence and lodge among the rocks and in crevices. At times after prolonged drought, this species is often the only green plant to be seen. It has some value in erosion control and in browse, and is only slightly inferior to regular sisal fiber. At present, only enough leaves are collected to satisfy the local needs, but much more could be collected

from wild plantings and sent through small decorticators and made into binder twine sized or larger ropes for local use or for export. The flower stalks, growing to heights of about 4 to 5 meters also can be used for fuel or as supports on which to dry the fiber ribbons.

SORGHUMS

There are five major classes of sorghum according to usage: grain, silage, grazing or freshchop, sweet sorgos, and broomcorn. To obtain collections of sorghums, the MDR could apply to the ICRISAT and grow them under several regimes of altitude and moisture. Above 850 meters, it probably should replace corn, as well as in areas that get less than about 400 mm of rainfall, on the average. Sorghum is much more resistant to drought than in corn. It will grow on very light soils that are too saline or too alkaline for corn. Purseglove lists the reasons why sorghum is more drought resistant that corn: 1) the above-ground organs of sorghum develop slowly while a good root system is being established, 2) sorghum produces twice as many secondary roots as does cors, 3) silica depoists in the endodermis of the roots prevent collapse during drought stress, 4) the leaf area is about half that of corn, 5)the leaves and stems have a waxy coating and roll inwardly in times of drought, 6) transpiration of water from sorghum is about half that of corn, 7) sorghum requires about 20% less water than corn to produce the same amount of dry matter, 8) sorghum can compete well with weeds after it is well established with deep root systems, 9) and most important of all -- the plant can interrupt its life cycle and remain dormant during periods of drought and resume growth when conditions become favorable, while corn cannot. If corn life cycle is severely interrupted, or if there is a lack of rain just before or during pollination, there will be no corn crop. There are presently sorghum cultivars that will yield more than corn. Some of these have white and cream colored seen coats and even yellow endosperms, high in carotene. If the grains were desired only for stock feeds, they could replace the requirement for much corn for that purpose. If people desired to enrich their cachupa with another grain, this type sorghum grain should suffice very well as it does in most parts of mainland West Africa. The darker tan and brown-seeded varieties should not be used for human food as they contain tannins which impart bitter taste and also interfere with protein metabolism.

The sudangrass (or sorghum x sudangrass crosses) types of this species could be readily used in silage, hay, or freshchop programs, as well as being available for grazing. These types do not produce grains that would be easily made into human foodstuffs. They could be grown at more arid altitudes than could corn varieties for this purpose as explained below for the millets.

There are available several varieties of sorgo or sweet sorghum that can be used to make sirup or even sugar. If found to be feasible and desirable, the sweet juice of sorgos might be used as a fermentable carbohydrate to mage aguardente or grog. Under optimum conditions, the sorgos should produce yields of millable stalks equal to those of sugarcase, and that in about 4 months instead of 12, freeing lands in the irrigated zones for producing more food crops.

Broomcorns might be grown to furnish brushes for making brooms in cottage industry to supplement other fibers presently used to make the usual rustic brushes and brooms presently made in the RCV.

It is most regrettable that the Portuguese did not promote sorghum in the colonial era. It is still not too late to rectify this error under independence.

MILLETS

It is most surprising the bulrush millet, (*Pennisetam typhoideum*) also called pearl or millet, is also absent from Cape Verdean agriculture. This crop is the stable in the driest parts of West Africa. It can be grown in poor sandy soils in very low rainfall areas. Its susceptibility to bird damage is no problem in the RCV, where there are few to no harmful birds. The grain is very nutritious and can be fed to livestock. The stalks and leaves have several uses in livestock feed, thatch, and fuel. There is a wealth of material to be tested and later planted commercially. There are cultivars which range from short to tall, 0.5 to 4.0 m.; early to late, 60 to 180 days; and green to purple color of the plants. It is the number one crop in the Sahel, of which the RCV is a weatern extension climatically. The earlier maturing varieties will mature with even less rainfall than required for sorghum. Purseglove (1972) states that the northern limit of sorghum is around the 375 mm isohyet, and that of bulrush millet is farther north, near the 250 mm rainfall line. As it

is seen, millet is a better choice than sorghum and sorghum is a better choice than corn in possibilities for Cape Verdean agriculture. Introduction of these cultures would require some adjustments in food habits of the people, but these might not be only necessary, but desirable since sorghum and millet offer some delicious and interesting dishes. Besides, there might not really be a choice short of importing corn or depending on international charity for corn. But there is a limit on patience of donor nations to provide corn and rice to a nation that could produce its own grain from sorghum and millet. There is an old American saying; "Try it, you'll like it."

One drawback to millet as compared to sorghum is that millet does not possess the ability to go into dormancy when there is moisture stress, and in this trait, it is like corn because it must complete its life cycle without interruption. High temperatures are required to mature the crop. Millet is relatively free from attacks from the witchweed, aphids, and stalk borers. It has good tillering ability, will produce ratoon crops, and yields very well. There are many types of millet that could be introduced for production of grain and/or forage to be fed as fresh-chop or as hay. These types stool freely to give high yields and lend themselves to ratoon or repeated cropping from the same planting. The ICRISAT at Hyderabad, India has a large collection of the various types according to the use the crop is to be put that should be introduced by the MRD and tested in the several ecological zones. Millet, like sorghum is very drought resistant and could grow in the drier areas not suitable for corn production. It would not have to be planted in rows and could occupy areas not needed for other crop production. To protect the plants from overgrazing, the crop could be cut at the optimum time and optimum height above ground level and either left to dry into hay, be made into silage, or carried to the penned livestock in lower areas.

PINEAPPLE

On Fogo, the West German experiments should be watched closely and any successes exploited. The pineapple should do well in the RCV where sufficient water would be available, where the soil pH is not up to neutrality or where it can be adjusted through soil amendments to below neutrality, and where the temperatures do not drop below 20C. While the

pineapple may never be grown for export, still many of the fruits could be sold in the municipal markets.

BAMBOOS

While a little timber bamboo grows in the archipelago, the best specimens were seen in Pombas in the Paul valley on Santo Antão, but in this same village a citizen reported that he had imported some structural bamboo from Portugal. This is regrettable since the rhizomatal material could have been divided many years ago to increase the existing material, which, in turn, could have been further divided to furnish plenty of material for the various uses to which bamboo can be put.

GARLIC

There are about 21 ha of garlic in the islands yielding about 3 t/ha, most of which is consumed locally. The irrigated areas seem to offer great possibilities for growing garlic for export. Care should be taken that the best available cultivars are used for planting and that the produce satisfies the grade and standards requirements for international trade. Drying conditions are excellent in the producing areas of Cape Verde.

SHRUBS AND TREES

Acacia Albida. Although this tree is already found growing in the RCV, its attributes are often overlooked. It sheds its leaves in the wet season, but puts on leaves in the dry season when they are needed for browse. Seeds from local trees should be planted in nurseries for transplanting later upon the advent of rains.

Atriplex spp. are commonly known as saltbushes, and should be introduced into the RCV in adaptation tests, especially for ground cover edible by livestock. They are highly salt tolerant and many remain green year-round. *A. nummularia* grows well in deep soil with only 150-200 mm of rainfall annually.

A start of planting stock is available from the Institut de Reboisement de Tunis, Tunisia, and might be expedited through USAID channels or those of CILSS.

Tamarugo and Paspalum Vaginatum. For the saline soils of Sal Maio, and Boavista, the Tamarugo tree and the *Paspalum vaginatum* grass might be tried to hold the dunes and furnish vegetation for the remaining animals

on those islands. The tamarugo is Prosopis tamarugo, similar to other Prospis trees. Its pods, seeds, and leaves make nutritious browse for sheep and goats. The tamarugo is very resistant to salt and can survive on very little water.

P. vaginatum, also known as siltgrass or seashore paspalum, is a salt water resistant, rhizomatous grass that is a good sand-binding grass and is a good forage plant. In the USA, there is a source of stock for establishing a nursery at the Sea Island Golf Club, Sea Island, Georgia 31561 (Mr. T. M. Baumgardner) that could probably be arranged through USAID channels.

Aloes. The plant Aloe vera (barbadense) grows well, almost subspontaneously, in Santo Antão, Sao Vicente and Sao Nicolau. Tens of thousands of the plants line the outer edges of highways for kilometers on these islands, while not acting as guard rails, delineate the road edges as guides to where the edges of the roads are. The plants, while not as fleshy after 10 or so years of prolonged drought, persist even today. Locally the leaves are used as purgatives, and when heated in the coals of fires, are used in folk medicine against rheumatism and contusions. In international trade, the leaves are used in skin creams, shampoos, and suntan lotions. The leaf juices are said to be of great value in treating radiation burns caused by radioactive materials. A study of the world demand and markets needs to be made before possibly beginning a small industry for extracting the juice, processing it, preferably with solar energy, and getting it to the marketplace.

GRAPES AND WINEMAKING

Duarte Fonseca (1967) quoted Padre Fernao Guerriero who in the 1604 Annual Report of the Jesuits stated that Fogo had good grade vineyards. Although he does not document his references, Duarte Fonseca also quoted writings from a voyage of Dampierre which stated that in Sao Nicolau there were produced in good years 120 to 160 hogsheads of good wine that sold for three pounds sterling per hogshead in 1683. In 1712, Frezier is quoted as encountering pleasing or agreeable wine from the vines on Santo Antão. Evidently many grapes were still growing there in 1773-1775 according to the report of its governor. As late as 1878, the Dicionario de Geografia Universal listed grapes as an important Cape Verdean crop. Although we

do not offer documentation, reportedly the wines produced in Cape Verde were so good that the Portuguese government ordered all the grapevines destroyed so that no wine could be produced to compete with the vines of Portugal. Now that this is no longer a problem, the vines could be replanted using improved, adapted stock for both table grapes and wine in areas that can be irrigated, especially using the "drip irrigation" technique of applying water drop-by-drop to the area where each vine grows. The most adapted or probable areas that would lend themselves to grade culture would be on the northeast slopes of Santo Antão, notably the Paul Valley, and on the island of Fogo.

Orlando Ribeiro (1954) shows the best areas for grapes on Fogo in his Figure 25. These include areas on the northeast slopes higher than 600 meters, mostly on Monte Velha, near Calcadinha, and between the two roads that flank the 700 meter contour line on the northwest of Fogo. This presupposes, of course, the availability of water perennially, as grades are perennial.

Grapes in Cape Verde ripen in June and July, when there are no grapes available in the European markets that were grown on that continent. There are plenty of willing laborers to harvest the crop, which might be shipped by air due to their high value per weight.

Attractive vines, heavily laden with grapes, were seen in the patio of the Pousada Praia del Mar in the capital city and on the State Farm Empressa Justinho Lopes in northwest Santiago Island, at the office building entrance, all vines apparently growing sell without diseases and insects.

POSSIBLE DAMAGE BY BIRDS TO CROPS

There are only a few birds on the Cape Verde Islands from which any crop or animal depredations can be expected. These include:

Brown-Necked Raven, Corvus ruficollis Lesson. Digs up freshly planted maize, using the seedling as a handle to pull up sprouting grain, which he eats. Lantana camera seeds have been found in its droppings, while corn seed and grasshoppers have been found in the stomachs of sacrificed birds. Old women and young boys are used to scare the raven from freshly planted maize fields. Small boys and monkeys rob the nests of eggs, and the female birds have to lay more than one clutch annually to make up for the deficit.

House Sparrow, Passer domesticus, and other finches. These birds eat grain scattered on the ground or put into feeders for chicken feed.

Cape Verde Islands Waxbill, Estrilda astrild jagoensis. This bird is sometimes a predator of the tomato crop, picking holes in the fruit on Santiago island, from which came its name.

Spanish Sparrow, Passer hispaniolensis hispaniolensis. This sparrow is known to attack orange fruits, boring large holes in the fruit on Sao Vicente.

Cane Warbler, Acrocephalus brevipennis. This bird used to feed on fig fruits, but is no present problem due to the shortage of fig fruit.

It is reported that the buzzards and vultures on the archipelago have, in isolated instances, killed and eaten small or weak animals, and even a newly born child in at least one instance, the child being born outdoors of a dying woman who could not protect the child, as she was very weak from malnutrition.

Appendix VI

VEGETABLE SEEDS DISTRIBUTED IN 1976, 1977, 1978 AND IN STOCK

Species	Variety	Quantity Used 1976	1977 Kg	1978	Quantity in Stock Kg
Abobora (Squash)	Big Max	-	2,570	-	7,430
	Prince Noire	470	2,430	40	3,020
	Small Sugar	-	1,260	220	6,500
Alface (Lettuce)	Batavia Blonde	-	490	-	-
	Batavia Laura	1,455	-	-	-
	Imperial 847	210	2,010	-	-
Beterraba (Beet)	Rouge Nobol	-	220	1,520	1,140
Cebola (Onion)	Excell	10,180	28,505	7,850	21,525
	Stuttgart	10,390	3,040	-	1,570
	Valence	11,700	5,860	450	1,990
Cenoura (Carrot)	Carentan	3,030	665	1,220	5,585
	Chantenay	4,810	15,060	1,160	-
	Nantes Half Long	4,180	1,860	600	3,360
Couve (Cabbage-Leaf)	Tronchuda Portuguesa	-	2,280	340	-
Couve-Flor (Cauliflower)	Dakar (?)	-	500	-	-
	Snowball	490	90	730	1,690
	Super Snowball	90	30	-	2,880
Ervihla (Peas)	Precovil	12,000	7,600	-	80,400
	Primaveril	10,800	4,400	-	84,800
	Television	10,000	2,800	-	87,200
Feijão (Bean)	Contender	45,200	10,800	-	144,000
	Regalfin	34,000	4,400	-	61,600
	Vernel	32,400	4,000	-	63,600
Melancia (Watermelon)	Fordhook Hybrid	-	740	390	8,850
	Sugar Baby	860	6,890	3,410	520

Species	Variety	Quantity Used 1976	1977 Kg	1978	Quantity in Stock Kg
Melão (Melon)	Cantaloupe Ananas	650	590	100	1,660
	Super Market	560	590	1,620	1,230
Nabo (Turnip)	Candia	-	500	710	1,580
	Graudy	-	500	640	1,760
Pepino (Cucumber)	Ashley	-	390	500	560
	Markerter	550	940	-	-
	Regula	70	160	-	770
	Triumph	810	130	-	560
Pimento (Pepper)	California Wonder	1,590	400	-	-
	Yolo Wonder	2,720	3,030	430	-
Repolho (Cabbage)	Brunswick	950	3,620	530	-
	Marché de Copenhaguen	880	990	-	-
	Earliana	740	570	3,490	-
	Dakar (?)	-	1,670	-	-
Tomate (Tomato)	Ace	700	-	-	-
	Marmande	1,775	955	2,010	1,320
	Pierson	515	-	-	-
	Rossol	400	-	-	-
	Saint Pierre	-	1,190	-	-
	Superami	520	-	-	-