AUSTRALIAN AGENCY for INTERNATIONAL DEVELOPMENT

AGRICULTURAL SYSTEMS OF PAPUA NEW GUINEA

Working Paper No. 3

WEST SEPIK PROVINCE

TEXT SUMMARIES, MAPS, CODE LISTS AND VILLAGE IDENTIFICATION

R.M. Bourke, B.J. Allen, R.L. Hide, D. Fritsch, R. Grau, E. Lowes, T. Nen, E. Nirsie, J. Risimeri and M. Woruba

REVISED and REPRINTED 2002

THE AUSTRALIAN NATIONAL UNIVERSITY

PAPUA NEW GUINEA DEPARTMENT OF AGRICULTURE AND LIVESTOCK

UNIVERSITY OF PAPUA NEW GUINEA

AGRICULTURAL SYSTEMS OF PAPUA NEW GUINEA

Working Paper No. 3

WEST SEPIK PROVINCE

TEXT SUMMARIES, MAPS, CODE LISTS AND VILLAGE IDENTIFICATION

**R.M. Bourke, B.J. Allen, R.L. Hide, D. Fritsch, R. Grau,
E. Lowes, T. Nen, E. Nirsie, J. Risimeri and M. Woruba**

**Department of Human Geography,
The Australian National University, ACT 0200, Australia.**

REVISED and REPRINTED 2002

Correct Citation:
Bourke, R.M., Allen, B.J., Hide, R.L., Fritsch, D., Grau, R., Lowes, E., Nen, T., Nirsie, E., Risimeri, J. and Woruba, M. (2002). *West Sepik Province: Text Summaries, Maps, Code Lists and Village Identification*. Agricultural Systems of Papua New Guinea Working Paper No. 3. Land Management Group, Department of Human Geography, Research School of Pacific and Asian Studies, The Australian National University, Canberra. Revised edition.

National Library of Australia Cataloguing-in-Publication Entry:
West Sepik Province: text summaries, maps, code lists and village identification.
Rev. ed.
ISBN 0 9579381 3 6
1. Agricultural systems – Papua New Guinea – West Sepik Province.
2. Agricultural geography – Papua New Guinea – West Sepik Province.
3. Agricultural mapping – Papua New Guinea – West Sepik Province.
I. Bourke, R.M. (Richard Michael). II. Australian National University. Land Management Group. (Series: Agricultural systems of Papua New Guinea working paper; no. 3).
630.99577

Cover Photograph:
The late Gore Gabriel clearing undergrowth from a pandanus nut grove in the Sinasina area, Simbu Province (R.L. Hide).

PREFACE

Acknowledgments

The following organizations have contributed financial support to this project: The Research School of Pacific and Asian Studies, The Australian National University; The Australian Agency for International Development; the Papua New Guinea-Australia Colloquium through the International Development Program of Australian Universities and Colleges and the Papua New Guinea National Research Institute; the Papua New Guinea Department of Agriculture and Livestock; the University of Papua New Guinea; and the National Geographic Society, Washington DC.

In the West Sepik Province, valuable assistance was given by George Kada, Philip Lopar, William Neimani, Philip Ryan, Tulai Sasambi, William Warmawin, West Sepik Department of Primary Industry; Fr Jan, But Catholic Mission; Br Charles Barry, Lumi High School; Joe Tape and Family, Yakamul Village; Trevor Robinson, Missionary Aviation Fellowship, Wewak; the PNG Institute of Medical Research; and Margaret Heyward, Wewak.

Technical advice and encouragement have been provided throughout the project by John McAlpine, Gael Keig and Sue Cuddy, Australian Commonwealth Scientific and Industrial Research Organization.

Support and advice have been received from Geoff Humphreys and Harold Brookfield, of the Land Management Project, and Gerard Ward (formerly Director), Research School of Pacific Studies, The Australian National University. Brookfield's (1971) study of Melanesian agricultural systems has been particularly influential.

The Papua New Guinea Agricultural Systems Project was developed from two previous studies. Michael Bourke began mapping Papua New Guinea agricultural systems in the 1970s while a Senior Horticulturalist with the PNG Department of Primary Industry (Bourke 1976). Robin Hide created an annotated bibliography of information on Papua New Guinea agricultural systems while working with the CSIRO PNGRIS group (Hide and Cuddy 1988).

Participants

The following persons participated in the production of this paper:

Australian National University: Bryant Allen, Michael Bourke, Robin Hide (conceptualisation, field mapping, data preparation, writing); Robin Grau (GIS management, ARC/INFO, map preparation); Daniel Fritsch (computer programming and database management); Claudia Camarotto, Anne Cochrane, Vivienne Laynne, Elanna Lowes (research assistance); Yvonne Byron (editorial assistance); Merv Commons (technical assistance).

Papua New Guinea Department of Agriculture and Livestock: Michael Allen, Ted Sitapai, Balthazar Wayi (coordination and planning); Jacob Alkane, Killian Anosa, Moses Woruba (field mapping).

West Sepik Rural Development Project: Clarkson Dickonson and Ricky Kasek, Vanimo (coordination and planning).

West Sepik Division of Primary Industry: Justin Koki, DRDO Nuku (field mapping).
Papua New Guinea National Research Institute: Wari Iamo (coordination and funding); Thomas Nen (field mapping).

Field Survey

The survey in this province was conducted over an extended period. Initial surveys were conducted in the Oksapmin area in November 1979 (4 days); throughout most of the rest of the province in May 1982 (3 weeks); and in the Mianmin area in January 1987 (4 weeks). The province was resurveyed over a 3 week period in June-July 1991 when extensive traverses were conducted by aircraft, road, foot and boat. One party visited the Telefomin area and the lowlands in the western part. Another two parties worked by road in the region between the East Sepik Province border and Lumi; and between Wewak and Aitape. A revisit was made to the Bimin-Oksapmin area in May 1992.

Revised and reprinted version

The Mapping Agricultural Systems Project database was revised in late 1998 (see Introduction to Working Paper Number 1). This working paper was reprinted in 2002. Karen Lummis, Tess McCarthy, Natalie Stuckings, Laura Vallee and Amber Pares were responsible for the production of the revised paper.

CONTENTS

1. INTRODUCTION

The major purpose of the Papua New Guinea Agricultural Systems Project is to produce information on small holder (subsistence) agriculture at provincial and national levels. Information is collected by field observation, interviews with villagers and reference to published and unpublished documents. The information is entered into a computer database (dBase IV), from where it is transferred to a mapping program (ARC/INFO). Methods are described by Bourke et al. (1993). This paper contains a written summary of the information on the Agricultural Systems in this Province, maps of selected agricultural features, a complete listing of all information in the database in coded form, and lists of villages with National Population Census codes, indexed by Agricultural Systems. This information will eventually be available on disk as a map-linked database suitable for use on a personal computer.

Identification of agricultural systems and subsystems

An Agricultural System is identified when a set of similar agricultural crops and practices occur within a defined area. Six criteria are used to distinguish one system from another:

1. Fallow type (the vegetation which is cleared from a garden site before cultivation).

2. Fallow period (the length of time a garden site is left unused between cultivations).

3. Cultivation intensity (the number of consecutive crops planted before fallow).

4. The staple, or most important, crops.

5. Garden and crop segregation (the extent to which crops are planted in separate gardens; in separate areas within a garden; or are planted sequentially).

6. Soil fertility maintenance techniques (other than natural regrowth fallows).

Where one or more of these factors differs significantly and the differences can be mapped, then a separate system is distinguished.

Where variation occurs, but is not able to be mapped at 1:500 000 scale because the areas in which the variation occurs are too small or are widely dispersed within the larger system, a subsystem is identified. Subsystems within an Agricultural System are allocated a separate record in the database, identified by the Agricultural System number and a subsystem number.

Sago is a widespread staple food in lowland Papua New Guinea. Sago is produced from palms which are not grown in gardens. Most of the criteria above cannot be applied. In this case, systems are differentiated on the basis of the staple crops only.

Relationship to PNGRIS

The Papua New Guinea Resource Information System (PNGRIS) contains information on the natural resources of PNG (Bellamy 1986). However PNGRIS contains no information on agricultural practices, other than an assessment of land use intensity based on air photograph interpretation by Saunders (1993), and ECOPHYS which is concerned with predicted crop performance in a specific environment (Hackett 1988). The Agricultural Systems Project is designed to provide detailed information on agricultural practices and cropping patterns as part of an upgraded PNGRIS geographical information system. For this reason the Agricultural Systems database contains almost no information on the environmental settings of the systems, except for altitude and slope. The layout of the text descriptions, the database code files and the village lists are modelled on PNGRIS formats (Cuddy 1987).

The mapping of Agricultural Systems has been carried out on the same map base and scale as PNGRIS (Tactical Pilotage Charts, 1:500 000). It is also done within the areas of agricultural land use established by Saunders (1993) from aerial photography. Except where specifically noted, Agricultural Systems boundaries have been mapped without reference to PNGRIS Resource Mapping Unit (RMU) boundaries. Agricultural Systems are defined at the level of the Province (following PNGRIS) but their wider distribution is recognised in the database by cross-referencing systems which cross provincial borders.

A preliminary view of the relationships between RMUs and the Agricultural Systems in this Province can be obtained from the listing of villages by Agricultural System, where RMU numbers are appended (Section 6.3).

Note for reprinted edition

Most of the fieldwork for this project was conducted over a six year period (late 1990 to late 1996). Over this period, a number of minor inconsistencies arose in data classification and presentation. As well, some changes occurred in conventions for the text fields and in the definitions of data fields, for example, for seasonality, fencing and burning. These changes were noted in the Preface of the Provincial Working Papers (first editions) as they occurred. One of the more important changes was that the cutoff points for the classification of cash earning activities were applied more consistently. Because of these inconsistencies and changes in definitions, it was necessary to revise the database so that it was consistent for all 19 provinces and to incorporate changes in agriculture systems since the original papers were produced.

Most changes, as distinct from definitional changes, relate to cash income. The revisions were done in late 1998. The largest number of changes occurred in the first four provincial working papers: East Sepik, West Sepik, Western and Gulf Provinces. Papers for the five Island Region provinces required the least number of changes. Agricultural systems that cross provincial boundaries have been adjusted so that the information is identical on both sides of the boundary, apart from some minor differences in some of the text fields. However the notes have not been updated to incorporate new publications since the Working Papers were completed.

References

Bellamy, J. (ed) 1986 *Papua New Guinea Inventory of Natural Resources, Population Distribution and Land Use Handbook*. CSIRO Division of Water and Land Resources, Natural Resources Series No. 6, Canberra.

Bourke, R.M. 1976 Food crop farming systems used on the Gazelle Peninsula of New Britain. In K. Willson and R.M. Bourke (eds) *Proceedings of the 1975 Papua New Guinea Food Crops Conference*, Department of Primary Industry, Port Moresby, 81-100.

Bourke, R.M., R.L. Hide, B.J. Allen, R. Grau, G.S. Humphreys and H.C. Brookfield 1993 Mapping agricultural systems in Papua New Guinea. In T. Taufa and C. Bass (eds) *Population, Family Health and Development. Volume 1 of Papers from the 19th Waigani Seminar, Port Moresby, 16-22 June 1991*. University of Papua New Guinea Press, Port Moresby, 205-224.

Brookfield, H.C. with D. Hart 1971 *Melanesia: a Geographical Interpretation of an Island World.* Methuen, London.

Cuddy, S.M. 1987 *Papua New Guinea Inventory of Natural Resources, Population Distribution and Land Use: Code Files* Parts I-VII. CSIRO Division of Water and Land Resources, Canberra.

Hackett, C. 1988 *Matching Plants and Land: Development of a General Broadscale System from a Crop Project for Papua New Guinea*. CSIRO Division of Water and Land Resources, Natural Resources Series No. 11, Canberra.

Hide, R.L. and S.M. Cuddy 1988 *Papua New Guinea Inventory of Natural Resources, Population Distribution and Land Use: Annotated and Selected Bibliography of Smallholder Farming Systems in PNG: Part I New Guinea Mainland, New Guinea Islands.* CSIRO Division of Water and Land Resources, Canberra.

National Nutrition Survey 1982/3. Provincial Tabulations. Papua New Guinea Institution of Medical Research and Nutrition Section, National Department of Health, Goroka.

Ruthenberg, H. 1980 *Farming Systems in the Tropics.* Oxford University Press, London.

Saunders, J.C. 1993 *Agricultural Land Use of Papua New Guinea* [map with explanatory notes]. Scale 1:1 000 000. PNGRIS Publication No. 1. CSIRO, Brisbane.

Smith, T., G. Keig, J. Marks and R. Grau 1992 Summary Results by Environmental Zone from the 1982-3 National Nutrition Survey of Papua New Guinea: Implications for Future Survey Design. Papua New Guinea Institute of Medical Research, Goroka.

2. DATABASE STRUCTURE, DEFINITIONS AND CODES

Information on agricultural systems is stored in a database, one record per agricultural system (or subsystem where identified) and 108 fields per record. This section lists the field ***names*** and their database abbreviations **[NAMES]**. Summary descriptions, explanatory notes and variable codes are given for each field.

LOCATION AND IDENTIFICATION

1. Provincial Identification **[PROVINCE]:** A two digit National Population Census code. Eg. code 14 = East Sepik Province. Provincial codes are listed in Appendix A.1.

2. System Identification **[SYSTIDNO]:** A two digit number identifying the agricultural system within this province. Eg. code 01 = System 01. Numbers are not assigned to systems within a province in any particular order.

3. Agricultural System **[AGSYST]:** Systems are also identified by a unique Papua New Guinea-wide four digit number. The first two digits are the National Population Census provincial code and the second two digits are the system identification number. Eg. 1401 = System 01 in the East Sepik Province.

4. Agricultural Subsystem **[SUBSYSIDNO]:** Subsystems are identified by a single digit. When referred to in the text they are preceded by the agricultural system number and a hyphen. Eg. 1418-1 is Subsystem 1 of System 1418.

5. Number of Subsystems **[NUMSUBSYS]:** A single digit specifying the number of subsystems that occur within this System.

6. District **[DISTRICT]:** The 1990 National Population Census code for the District within which the System is located. More than one District may be listed. District codes are listed in Appendix A.2.

7. Census Divisions **[CENSUSDIV]:** The 1980 National Population Census code for the Census Divisions that occur within the System. Census Division codes for this Province are listed in Appendix A.2.

ENVIRONMENTAL

8. Lowest Altitude **[ALTLOW]:** The lowest altitude, in metres (rounded), to which the System extends.

9. Highest Altitude **[ALTHIGH]:** The highest altitude, in metres (rounded), to which the System extends.

10. Garden Slope **[SLOPE]:** The average slope of gardens in the System.

1	Flat	(<2^{o})
2	Gentle	(2-10^{o})
3	Steep	(10-25^{o})
4	Very steep	(>25^{o})
5	Multiple classes	

***11. Survey Description* [SURVDESC]:** A text description of the areas visited or not visited within the system, the length of time spent in different areas, traverses undertaken, the mode of transport used, the month and year of the survey, and the sources of any documentary information used.

***12. Summary Description* [SYSSUMM]:** A concise text description of the agricultural system, and subsystems (if any), focussed on the occurrence of the major distinguishing criteria.

***13. System Boundary Definitions* [BOUNDDEF]:** A brief description of how the boundaries between systems were identified and mapped. The boundaries between agricultural and non-agricultural land use were taken from Saunders (1993).

***14. Systems Crossing Provincial Borders* [OTHPROV]:** A logical field (yes/no) which indicates whether the System crosses a provincial border.

***15. Same System in Adjacent Province* [PROVSYS]:** A listing of AGSYST numbers (see Field 3 above) of up to two systems in adjacent provinces which are identical to this system, for systems which cross provincial borders.

***16. Subsystem Extent* [SUBSYSEXT]:** An estimate of the proportion of the area of the total system occupied by a subsystem. In the case of there being no subsystems this field is listed as 100 per cent.

1	25 per cent
2	50 per cent
3	75 per cent
4	100 per cent

***17. Type of Fallow Vegetation Cleared* [FALLTYPE]:** The predominant type of vegetation cleared from garden sites at the beginning of a new period of cultivation. Where short fallows are used (see Field 18 below), fallow type refers to the vegetation cleared after a long fallow.

1	Short grass (*eg. kunai < 1.5 m tall*)
2	Tall grass (*eg. Miscanthus or Saccharum > 1.5 m tall*)
3	Grass and woody regrowth *(dense short or tall grass and short woody regrowth*)
4	Short woody regrowth (*shrubs/trees < 10 m tall*)
5	Tall woody regrowth (*trees > 10 m tall*)
6	Forest (*no indication of previous use*)
7	No long fallow
8	Savanna *(Scattered woody growth with grass ground cover)*

***18. Use of Short Fallows* [SHORTFALL]:** A presence and significance measure which indicates whether short fallows are used. Short fallows are brief periods of less than 12 months between plantings during which land is left fallow.

***19. The Long Fallow Period* [FALLPER]:** An estimate of the length of time (greater than 12 months) land is left to revert to regrowth, before it is cultivated again. Class 0 refers to situations where very long cropping intervals (40 plantings or more) make long fallows not significant.

0	Not significant
1	1 to 4 years
2	5 to 15 years
3	Greater than 15 years

***20. Cropping Intensity* [CROPINT]:** The number of times staple crops are planted in the main gardens before those gardens are returned to a long fallow. Short fallows of less than 12 months (see Field 18 above) are excluded for this purpose: they may occur between plantings without affecting the classification. The class 'More than 40 plantings', refers to situations where land has been planted continuously without a long fallow since the Pacific War (1942-45) or longer. In such cases Field 19, Long Fallow Period, is classed as 'Long fallow period not significant'.

1	1 planting only
2	2 plantings
3	3 to 5 plantings
4	6 to 14 plantings
5	15 to 40 plantings
6	More than 40 plantings

CROP COMPONENTS

***21. The Dominant Staple Crops* [DOMSTAP]:** The most important staple food crops grown in the subsystem. A major staple is defined as a crop estimated to cover more than one-third of staple garden area, and therefore no more than 3 dominant staples may be identified for a system. An important exception occurs when sago is the staple. Sago is extracted from palms which are not cultivated in gardens. In the text accounts (System Summaries and Notes), dominant staples are described as the '*most important crops*'.

***22. The Subdominant Staple Crops* [SUBSTAP]:** Staple food crops of lesser importance grown in the subsystem. A subdominant staple is defined as a crop estimated to cover more than 10 per cent of a staple garden area; up to six crops may be listed. An important exception occurs when sago is the staple. Sago is extracted from palms which are not cultivated in gardens. In the text accounts (System Summaries and Notes), subdominant staples are described as '*important crops*'.

***23. All Staple Crops* [ALLSTAP]:** A list of up to 10 staple crops including crops classed as dominant and subdominant, as well as other staple crops which occur commonly. In the text accounts (System Summaries and Notes), staple crops which are classified as neither dominant nor subdominant are described as '*other crops*'.

01	Mixed staple (no dominant staple: a mix of some or all of: banana, taro, sweet potato Chinese taro, yam, cassava and corn)		
02	Banana *(Musa* cvs*)*	13	Taro *(Colocasia esculenta*)
03	Breadfruit *(Artocarpus altilis)*	14	Yam *(Dioscorea alata*)
04	Cassava *(Manihot esculenta)*	15	Yam *(Dioscorea esculenta*)
05	Chinese taro *(Xanthosoma sagittifolium)*	16	Yam *(Dioscorea pentaphylla*)
06	Coconut *(Cocos nucifera)*	17	Other
07	Corn *(Zea mays)*	18	Queensland arrowroot (*Canna edulis)*
08	Potato *(Solanum tuberosum)*		
09	Sago *(Metroxylon sagu)*	19	Taro (Amorphophallus) *(Amorphophallus paeoniifolius)*
10	Swamp taro *(Cyrtosperma chamissonis)*	20	Yam *(Dioscorea bulbifera)*
11	Sweet potato *(Ipomoea batatas)*	21	Yam *(Dioscorea nummularia)*
12	Taro *(Alocasia macrorrhiza*)		

***24. Other Vegetable Crops* [VEG]:** A list of up to 10 important vegetable crops:

01 Aibika *(Abelmoschus manihot)*
02 Amaranthus *(Amaranthus* spp.*)*
03 Bean, common *(Phaseolus vulgaris)*
04 Bean, lablab *(Lablab purpureus)*
05 Bean, winged *(Psophocarpus tetragonolobus)*
06 Cabbage *(Brassica oleracea var. capitata)*
07 Chinese cabbage *(Brassica chinensis)*
08 Choko tips *(Sechium edule)*
09 Corn *(Zea mays)*
10 Cucumber *(Cucumis sativus)*
11 Ferns
12 Ginger *(Zingiber officinale)*
13 Highland pitpit *(Setaria palmifolia)*
14 Kangkong *(Ipomoea aquatica)*
15 Kumu musong *(Ficus copiosa)*
16 Lowland pitpit *(Saccharum edule)*
17 Nasturtium *(Nasturtium* spp.*)*
18 Oenanthe *(Oenanthe javanica)*
19 Peanuts *(Arachis hypogaea)*
20 Pumpkin fruit *(Cucurbita moschata)*
21 Pumpkin tips *(Cucurbita moschata)*
22 Rungia *(Rungia klossii)*
23 Tulip *(Gnetum gnemon)*
24 Valangur *(Polyscias* spp.*)*
25 Balbal *(Erythrina variegata)*
26 Bamboo shoots
27 Bean, snake *(Vigna unguiculata)*
28 Spring onion *(Allium cepa var. cepa)*
29 Sweet potato leaves *(Ipomoea batatas)*
30 Taro leaves *(Colocasia esculenta)*
31 Watercress *(Nasturtium officinale)*
32 Other
33 Bean, lima *(Phaseolus lunatus)*
34 Bottle gourd *(Lagenaria siceraria)*
35 Dicliptera *(Dicliptera papuana)*
36 Kalava *(Ormocarpum orientale)*
37 Karakap *(Solanum nodiflorum)*
38 Basil *(Ocimum basilicum)*
39 Bean leaves *(Phaseolus* spp.)
40 Cassava leaves *(Manihot esculenta)*
41 Chilli leaves *(Capsicum frutescens)*
42 Eggplant *(Solanum melongena)*
43 Pigeon pea *(Cajanus cajan)*
44 Tomato *(Lycopersicon esculentum)*

***25. Fruit Crops* [FRUIT]:** A list of up to 8 important fruits grown:

01 Avocado (*Persea americana)*
02 Banana *(Musa* cvs*)*
03 Bukabuk (*Burckella obovata)*
04 Coastal pandanus *(Pandanus tectorius)*
05 Malay apple *(Syzygium malaccense)*
06 Mandarin *(Citrus reticulata)*
07 Mango *(Mangifera indica)*
08 Marita pandanus *(Pandanus conoideus)*
09 Orange (*Citrus sinensis)*
10 Passionfruit, banana *(Passiflora mollissima)*
11 Passionfruit, other *(Passiflora* spp.*)*
12 Pawpaw *(Carica papaya)*
13 Pineapple *(Ananas comosus)*
14 Rambutan *(Nephelium lappaceum)*
15 Sugar *(Saccharum officinarum)*
16 Ton *(Pometia pinnata)*
17 Watermelon *(Citrullus lanatus)*
18 Other
19 Custard apple *(Annona squamosa)*
20 Golden apple *(Spondias cytherea)*
21 Granadilla (*Passiflora quadrangularis)*
22 Grapefruit (*Citrus paradisi)*
23 Guava (*Psidium guajava)*
24 Lemon (*Citrus limon)*
25 Lime *(Citrus aurantifolia)*
26 Parartocarpus *(Parartocarpus venenosa)*
27 Pomelo *(Citrus maxima)*
28 Pouteria *(Pouteria maclayana)*
29 Raspberry *(Rubus* spp.)
30 Soursop *(Annona muricata)*
31 Tree tomato *(Cyphomandra betacea)*
32 Watery rose apple *(Syzygium aqueum)*
33 Governor's plum *(Flacourtia indica)*
34 Lovi-lovi *(Flacourtia inermis)*
35 Mon *(Dracontomelon dao)*
36 Rukam *(Flacourtia rukam)*
37 Ficus *(Ficus* spp.)

***26. Nut Crops* [NUT]:** A list of up to 5 important nuts grown or collected:

01	Breadfruit *(Artocarpus altilis)*	09	Karuka, wild *(Pandanus brosimos)*
02	Candle nut *(Aleurites moluccana)*	10	Okari *(T. kaernbachii/ T. impediens*)
03	Castanopsis *(Castanopsis acuminatissima)*	11	Sis *(Pangium edule)*
		12	Pao *(Barringtonia* spp.)
04	Coconut *(Cocos nucifera)*	13	Tulip *(Gnetum gnemon)*
05	Finschia *(Finschia chloroxantha)*	14	Other
06	Galip *(Canarium indicum*)	15	Polynesian chestnut *(Inocarpus fagifer)*
07	Java almond *(Terminalia catappa*)		
08	Karuka, planted *(Pandanus julianettii)*	16	Cycad *(Cycas* spp.)
		17	Entada *(Entada scandens)*
		18	Dausia *(Terminalia megalocarpa)*

***27. Narcotic Crops* [NARC]:** A list of up to 5 important narcotics grown:

1	Betel nut, highland *(Areca macrocalyx)*
2	Betel nut, lowland *(Areca catechu)*
3	Betel pepper, highland (*Piper gibbilimbum*)
4	Betel pepper, lowland *(Piper betle)*
5	Tobacco *(Nicotiana tabacum)*
6	Kava *(Piper methysticum)*

FORMS OF GARDEN AND CROP SEGREGATION

***28. Garden Segregation* [GARDSEG]:** A presence and significance measure of whether individual staple food crops are planted in different gardens. A garden is a contiguous area of land planted with crops under the management of a social unit such as a family or a household. If some gardens are sited in different vegetation zones, and have different fallow periods, cultivation periods or other agronomic characteristics, then they are assigned to a separate subsystem.

All presence and significance measures are coded as follows:

0	None
1	Minor or insignificant
2	Significant
3	Very significant

***29. Crop Segregation* [CROPSEG]:** A presence and significance measure of whether individual staple food crops are planted separately in different parts of the same garden.

***30. Crop Sequences* [CROPSEQU]**: A presence and significance measure of whether the harvesting of one crop species is usually followed by the planting of another, eg. yams followed by sweet potato, or sweet potato followed by peanuts followed by sweet potato (see also Field 33 below).

***31. Mixed Vegetable Gardens* [MIXGARD]:** A presence and significance measure of whether mixed gardens are used. A mixed garden is typically a garden which is subsidiary to that containing the main staple(s). It is planted with a wide range of either subdominant staples and/or other vegetables. It may or may not be distinguished from the main garden types by different fallow and agronomic techniques.

***32. Household Gardens* [HOUSGARD]:** A presence and significance measure of whether house gardens are used. A house garden is typically a garden that is small relative to the main gardens, is located near houses, and which contains a variety of crops. Also known as door yard or kitchen gardens.

SOIL FERTILITY MAINTENANCE TECHNIQUES

33. Legume Rotation **[LEGUMROT]:** A presence and significance measure of whether a leguminous crop (eg. peanuts or winged bean) is grown between plantings of main food crops.

34. Planted Tree Fallow **[TREEFALL]:** A presence and significance measure of whether tree species (eg. *Casuarina oligodon* or *Parasponia* spp.) are planted into gardens or fallows for the stated purpose of improving soil quality during subsequent cultivations. This measure excludes the practice of planting fruit tree species into gardens and fallows, but does not exclude the planted trees being used for timber or firewood.

35. The Use of Compost **[COMPOST]:** A presence and significance measure of whether organic matter is placed beneath the surface of the soil.

36. The Use of Animal Manure **[MANURE]:** A presence and significance measure of whether animal manure is placed on or in the soil. The measure does not include the deposition of manure by the animals themselves, eg. pigs tethered in gardens.

37. The Use of Island Beds: **[ISLBED]:** A presence and significance measure of whether island beds are used. Island beds are beds of soil on which crops are planted and which are raised above the level of a surrounding area of standing or slowly moving water.

38. The Contribution of Silt from Flooding **[SILT]:** A presence and significance measure of whether silt from floods is deposited either regularly or sporadically on the soil surface in gardens. It is assumed the flooding is of natural causes, but the measure does not exclude deliberate manipulation of stream channels in order to enhance the delivery of silt or for the partial control of flood waters.

39. The Use of Inorganic Fertiliser **[FERT]:** A presence and significance measure of whether inorganic fertiliser is applied to gardens. This measure excludes the use of inorganic fertiliser on cash crops, such as coffee or vegetables.

OTHER AGRICULTURAL PRACTICES

40. The Placing of Pigs in Gardens **[PIGSIN]:** A presence and significance measure of whether pigs are placed in gardens between plantings. Pigs may be placed in gardens between plantings for a number of stated reasons, eg. to eat earthworms, to eat unharvested crops, or to till the soil. This measure excludes the deliberate breaking of fences to allow pigs to forage after the cropping phase.

41. Burning **[BURN]:** A presence and significance measure of whether fallow vegetation cleared and cut in a new garden site is burnt before the planting of the staple crops. The measure includes the burning of material which has been heaped. Significance takes into account the frequency of burning relative to the cropping intensity. So, for example, if the majority of the fallow material cleared from the site is burnt at the initial clearing of a garden, and only one or two plantings are made before fallowing, burning is Very Significant. If the same thing occurs at clearing, but a large number of plantings are made before the next long fallow, with little or no burning between plantings, burning is Minor.

***42. Soil Tillage* [TILL]:** A presence and significance measure of whether soil in the staple food gardens is tilled before planting. Tillage includes the breaking up, or turning over, of the whole or the major part of the soil on the garden surface. The measure includes tillage in either the first planting and/or subsequent plantings. The formation of soil mounds and beds (see Fields 53-58 below) involves working the soil into a tilth, but in order to distinguish clearly between these processes, mounds and beds are not automatically classified as soil tillage.

***43. The Use of Deep Holing* [HOLE]:** A presence and significance measure of whether deep holing is used. Deep holing is sometimes used in yam cultivation in order to influence the dimensions and shape of the tubers. Deep (> 50 cm) holes are dug, the soil is broken into a fine tilth and the hole re-filled before planting. The use of this technique is usually restricted to the cultivation of *Dioscorea alata.*

***44. Cutting Fallow Vegetation Onto the Crops* [FALLCUT]:** A presence and significance measure of whether crops are planted beneath standing fallow vegetation, and the vegetation is later cut down onto the growing crops.

***45. The Use of Fences* [FENCE]:** A presence and significance measure of whether gardens are fenced. Fences are linear barriers made of wood, bamboo, cane grass or stones, and may incorporate a ditch or a bank. The measure excludes low ridges which form between fields when stones are thrown to the perimeter during cultivation. In the assessment of the significance of fences, the occurrence of fences around every individual garden is given greater significance than one fence around a large number of gardens.

***46. The Use of Irrigation* [IRRIG]:** A presence and significance measure of whether water is applied to crops by the use of channels or aqueducts.

***47. The Use of Mulch* [MULCH]:** A presence and significance measure of whether a mulch is used to cultivate the staple crops. A mulch is organic material which is applied to the soil surface. If the material is placed beneath the soil surface it is defined as a compost (see Field 35 above).

***48. The Seasonality of Main Crops* [SEASMAJ]:** A presence and significance measure of whether the dominant staples (most important food crops) and the subdominant staples (important food crops) are planted at about the same time each year.

***49. The Seasonality of Other Crops* [SEASMIN]:** A presence and significance measure of whether other staple crops and vegetable crops are planted at about the same time each year.

***50. The Use of Drains* [DRAIN]:** A presence and significance measure of whether ditches are used in and around gardens to remove surface water or to lower the groundwater table.

***51. The Use of Soil Retention Barriers* [SOILRET]:** A presence and significance measure of whether structures (pegged logs, fences or hurdles, stone walls) are constructed along the contour or below individual plants, in order to prevent or reduce the down slope movement of soil.

***52. The Use of Staking* [STAKE]:** A presence and significance measure of whether crops are trained or tied up stakes, trellises or standing dead trees to lift them off the soil surface. The practice is usually applied to yams (*Dioscorea* spp.), beans, sugarcane, and sometimes gourds, cucumber and choko.

MOUNDING TECHNIQUES

In many parts of Papua New Guinea the soil is formed into circular mounds of varying dimensions and crops are planted on them. Mounding should not be confused with composting (see Field 35 above). Mounds may or may not contain compost and composting may take place in the absence of mounds. Mounds are usually re-formed at each new planting. Mound formation usually involves extensive soil disturbance. The effect can be similar to complete soil tillage (see Field 42 above).

The following fields contain presence and significance measures of whether mounds of the specified dimensions are used in the system.

53. Very Small Mounds **[VSMMOUND]:** Mounds up to 10 cm high.

54. Small Mounds **[SMMOUND]:** Mounds 10 to 40 cm high.

55. Medium Sized Mounds **[MOUND]:** Mounds 40-70 cm high and between 1 m and 2.5 m in diameter.

56. Large Mounds **[LRGEMOUND]:** Mounds > 70 cm high and > 2.5 m in diameter.

GARDEN BED TECHNIQUES

In some locations the soil is also raised into beds and crops planted on them. Bed formation usually involves extensive soil disturbance. The effect can be similar to complete soil tillage (see Field 42 above). Two shapes of beds are distinguishable:

57. Square Beds **[BEDSQ]:** Square beds are constructed by digging shallow ditches typically 2 to 4 metres apart on a grid layout, and throwing the soil removed onto the surface to form a bed. The outcome is a characteristic chequerboard or gridiron pattern in gardens.

58. Long Beds **[BEDLONG]:** Long beds are constructed by digging shallow ditches down slope typically 2 to 4 metres apart and over 10 metres in length, and throwing the soil removed to the centre to form a bed.

59. Mechanical Soil Tillage **[MECHAN]:** The use of tractors or hand-held cultivators in the preparation of a garden site for food crops. The measure includes the use of machinery in the cultivation of crops for sale.

CASH EARNING ACTIVITIES

A presence and significance measure of the importance of the following common rural cash income sources. The list includes sources related to agricultural or land based production from the farmers' own resources.

60. Animal Products **[ANSKIN]:** The sale of animal skins, furs and bird plumes, but not fresh meat.

61. Betel Nut **[BETEL]:** The sale of betel nuts (*Areca catechu* or *A. macrocalyx)* and associated items like pepper and lime.

62. Cardamom **[CARDAM]:** The sale of cardamom (*Elettaria cardamomum).*

63. Cattle **[CATTLE]:** The sale of cattle as live beasts or as fresh meat.

***64. Chillies* [CHILLIE]:** The sale of dried chillies (*Capsicum frutescens).*

***65. Cocoa* [COCOA]:** The sale of cocoa (*Theobroma cacao)* beans.

***66. Copra* [CNUT]:** The sale of copra and nuts from coconut palms (*Cocos nucifera).*

***67. Arabica Coffee* [COFFARAB]:** The sale of Arabica coffee (*Coffea arabica*).

***68. Robusta Coffee* [COFFROB]:** The sale of Robusta coffee (*Coffea canephora*).

***69. Crocodile Products* [CROC]:** The sale of freshwater and saltwater crocodile (*Crocodylus* spp.) skins or meat, from managed and wild animals.

***70. Firewood* [FIREWOOD]:** The sale of firewood.

***71. Fish* [FISH]:** The sale of fresh or smoked freshwater or saltwater fish, shellfish or crustacea.

***72. Fresh Food:* [FOOD]:** The sale of fresh vegetables, fruits, nuts and fresh or smoked meat from domesticated or wild animals.

***73. Oil Palm* [OILPALM]:** The sale of palm oil fruit (*Elaeis guineensis).*

***74. Potato* [POTATO]:** The sale of Irish potatoes (*Solanum tuberosum).*

***75. Pyrethrum* [PYRETH]:** The sale of dried pyrethrum flowers (*Chrysanthemum cinerariaefolium).*

***76. Rice* [RICE]:** The sale of rice (*Oryza sativa).*

***77. Rubber* [RUBB]**: The sale of latex from rubber trees (*Hevea brasiliensis).*

***78. Sheep and Wool* [SHEEP]:** The sale of sheep as live animals, or meat and the sale of wool.

***79. Tea* [TEA]:** The sale of unprocessed tea (*Camellia sinensis).*

***80. Tobacco* [TOBACCO]:** The sale of the dried tobacco leaf (*Nicotiana tabacum).*

***81-82. Other* [OTHER1] [OTHER2]:** Other unlisted sources of cash include the sale of copal gum (*Agathis* sp.), massoi bark (*Massoia aromatica*), tigasso oil (*Campnosperma* sp.), salt extracted from plants or natural springs and deposits, mineral oil, bêche-de-mer, insects and butterflies, live birds, marsupials, pigs and horses, house building materials including thatching and sheets of woven cane, canoe hulls, clothing, weapons, string bags, carvings and artefacts. This category excludes other sources of cash income such as wages and salaries, logging or mining royalties, gold mining, banditry, gambling and remittances. These are mentioned in Notes (Field 83) if they are important.

***83. Further Notes* [NOTES]:** Additional notes on particularly outstanding features of the system and further information drawn from published and unpublished documents.

SURVEY DETAILS

Fields ***84-101*** contain details of dates when observations were made of the system for the purposes of this project and the names of the persons who made the observations. Up to three survey visits can be accommodated. The field names are:

Month of a short visit [**SVDATMON**]: Eg. 01 = January.
Year of a short visit [**SVDATYR**]: Eg. 1992.
Period of a longer term study [**SVPERYRA**]: Eg. 1971-72.
Person making the visit [**SURVNAME**]: Initials of person(s). Full names are given in a Key on the relevant page in Section 5.

The type of survey [**SURVTYPE**]

1	Very brief visit to one place (less than an hour), or interviews
2	Short visit to a few places (less than 1 day)
3	Visits to several places (1 to 3 days)
4	Multiple visits to many places (4 to 15 days)
5	Multiple visits to many locations over several years (more than 15 days)

102. Information From the National Nutrition Survey 1982-83 **[NNS]:** The National Nutrition Survey 1982/83, selected families in villages across most of the country from a sampling frame based on environments drawn from PNGRIS classifications. Amongst other questions, people were asked what foods they had eaten during the previous day (NNS 1982/3). For systems in which more than 10 families were interviewed, responses for particular foods are presented as percentages of the total number of families interviewed. Results are presented only for staple foods, fresh fish and purchased rice. The entry includes the number of families and number of villages surveyed, and the month and year of survey.

This information is more than 10 years old and is independent of the information collected by the Agricultural Systems Project. It should be used carefully (Smith et al. 1992). In some Systems the sample size is small and villages sampled may be restricted to one part of the System. It is possible that Chinese taro (*Xanthosoma sagittifolium*) has been included in the general term 'taro', increasing the importance of taro (*Colocasia esculenta*) and decreasing the importance of Chinese taro. Where diets change seasonally, the results may also be unrepresentative.

103. Main References **[REF]:** References to published and unpublished documents that contain substantial information on agriculture in the System.

104. Other References **[REF2]:** References to published and unpublished documents that contain additional information directly relevant to the Agricultural System.

105. The Area of the System **[AREA]**: The area, in square kilometres, occupied by the System. The figure is calculated by the mapping program ARC/INFO.

106. Total Resident Population 1980 **[TOTPOP]:** The total population resident within the area covered by the System at the time of the 1980 National Population Census. The 1990 National Population Census figures are not used because of questions over their reliability, but the 1990 National Population Census maps are used to locate most Census Units.

107. The Number of People Living Outside the System **[ABSPOPPER]:** An estimate of the proportion of the population absent from villages in the system in 1978-79, expressed as a percentage of the total population. The figure is the difference between the 'total' population and the 'resident' population listed in the 1978-79 Provincial Data System (PDS) Rural Community Register for the Province. The 'total' population is the total number of persons listed in the Village Book and the 'resident' population the number living in the village, or who have been absent for less than 6 months at the time of the census. In some cases 'total' and 'resident' populations in the PDS are the same.

108. The Population Density **[POPDEN]:** The number of persons per square kilometre in 1980, calculated by dividing Field 106 (total population) by Field 105 (area). There are two situations where adjusted figures are given (indicated by "*"). In some systems sago is the staple food and there is little or no agriculture or subsistence is based completely on non-agricultural activities (eg. fishing or trading) and no agricultural land use can be identified. For these systems the area has been adjusted to include a 5 kilometre buffer strip around the system boundary, or centred on settlements where no land use is identified. The 5 kilometre buffer zone is assumed to be the area of non-agricultural land, usually forest, in which wild plants and animals are exploited. In the latter case, settlements are identified with point symbols. The second kind of adjustment occurs where the populations of two adjoining systems, both of which use both systems, are unequally distributed in the two system areas due to the locations of the census units. In such cases, adjusted population density figures are shown (for example, Milne Bay Province Systems 0501 and 0502), with explanations in Notes (Field 83).

109. The Intensity of Land Use **[RVALUE]:** The R value (Ruthenberg 1980, 15) is an estimate of the intensity of land use, derived from the ratio of the Cropping Period in years to the length of the cultivation cycle in years. Cropping Period is estimated from the number of plantings of the staple crops before a long fallow (see Field 20 above). The cultivation cycle is the sum of the Cropping Period and the Long Fallow Period (see Field 19 above). The R value is thus:

$$\frac{\text{Cropping Period} \times 100}{\text{Cropping Period} + \text{Long Fallow Period}}$$

Because in this survey both the cropping period and the long fallow period are described as classes, conversion of the class ranges to single year values is necessary in order to calculate R values. The following conversions are used for most crops:

Cropping period	**Years**	**Long fallow period**	**Years**
1 planting only	1	Not used	0
2 plantings	2	1-4 years	3
3-5 plantings	4	5-15 years	10
6-14 plantings	10	>15 years	20
>14 plantings	20		

Triploid banana or Chinese taro may produce for several years from a single planting. In systems in which these crops are dominant staples or subdominant staples with significant land use, the cropping period is adjusted upwards. The adjustment is based on estimates of how long these crops produce from a single planting before a long fallow. Where there is evidence of a cropping period without a long fallow of longer than 20 years, the cropping period is adjusted upwards, to a maximum of 50 years.

3. AGRICULTURAL SYSTEMS: TEXT SUMMARIES

Text summaries take two forms: those for the first or only subsystem in an Agricultural System, and those for subsequent subsystems.

1. The headers on text summaries for the first or only subsystem in an Agricultural System are as follows:

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No**. 1 **Subsystem No** 1 **of** 1	
Districts 4 Telefomin	**Subsystem Extent** 100%	**Area (sq km)** 1259
Population 8,530	**Population Density** 7 **persons/sq km**	**Population absent** 7%

This header contains information in the top right hand corner on the number of subsystems descriptions which follow.

This header also contains information for the *whole* Agricultural System on Districts, area, population, population density and absenteeism.

2. Headers on text summaries of subsequent subsystems are as follows:

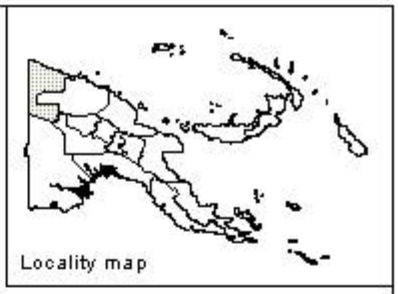
PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No**. 3	**Subsystem No** 2 **of** 2
Districts 4 Telefomin	**Subsystem Extent** 25 %	

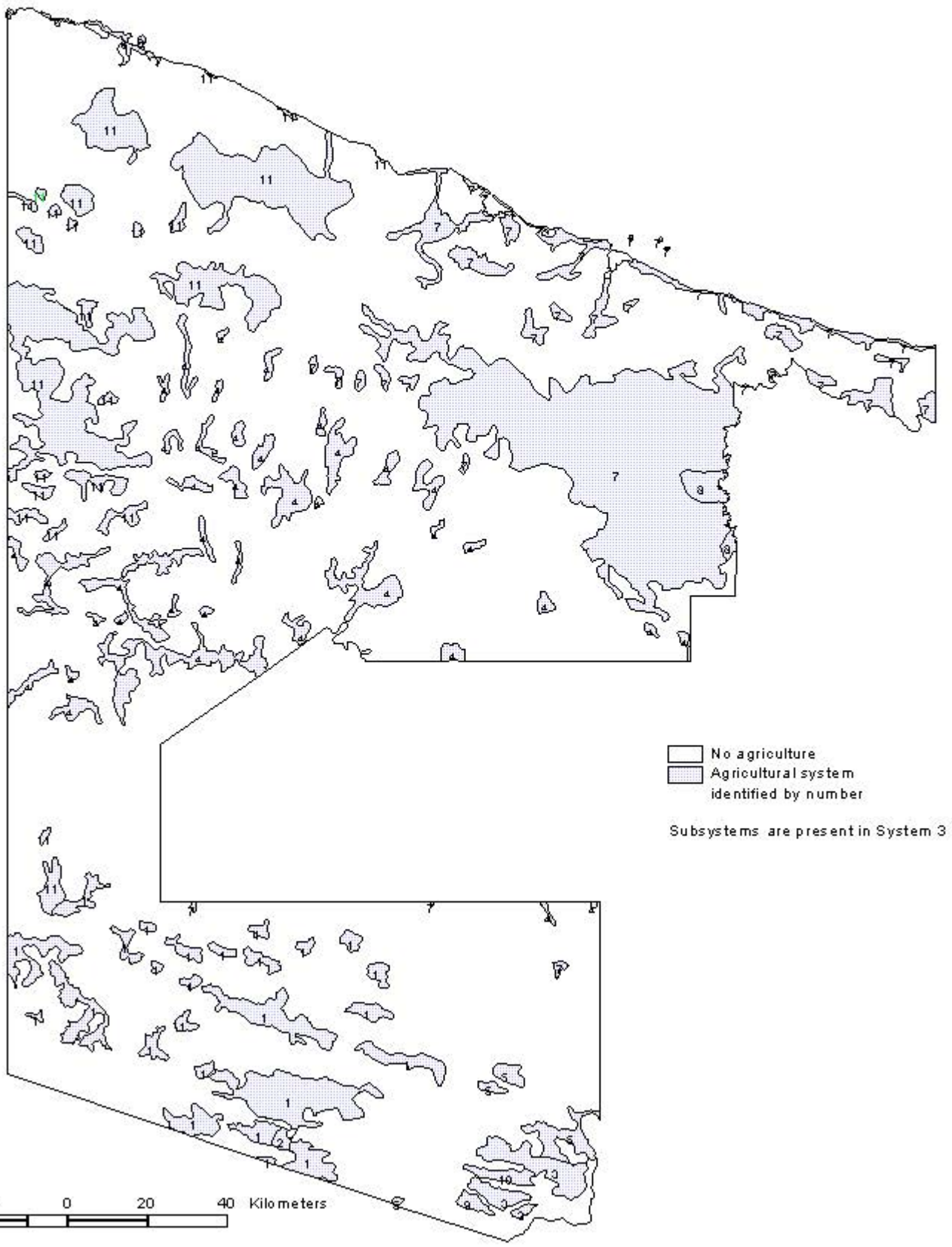
They contain information on Districts and subsystem extent only.

Headers on second and subsequent pages of summaries are as follows:

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No**. 1	**Subsystem No** 1 **of** 1

WEST SEPIK PROVINCE
Agricultural systems





Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 1	**Subsystem No.** 1 **of** 1
Districts 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 1259
Population 8,530	**Population density** 7 **persons/sq km**	**Population absent** 7 **%**

System Summary

Located in the mountainous areas north of Tabubil and Olsobip station and extending into the Telefomin and Feramin areas of West Sepik Province. The undergrowth is cleared from beneath tall woody regrowth, generally 15-25 years old. Taro is the most important crop; sweet potato and Chinese taro are important crops; other crop are banana, cassava and yam (D. alata). Taro is planted beneath the trees. As the crop matures, trees are thinned and eventually all trees may be either cut down or killed and left standing, so that direct sunlight is allowed to reach the crop. Chinese taro is planted in separate gardens below 1300 m altitude. Sweet potato is planted as a segregated crop in taro gardens. Some cleared undergrowth is burnt, and much is heaped within the gardens or along the garden edge, but a thick layer of mulch is left on the soil surface at planting. Only one planting is made before fallowing. Gardens are extended progressively beneath standing trees across a site, until all suitable land has been cultivated and a new site is sought.

Extends across provincial border to System(s) 0101

Altitude range (m) 400-2000 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	Taro (Colocasia)
STAPLES SUBDOMINANT	Chinese taro, Sweet potato
STAPLES PRESENT	Banana, Cassava, Chinese taro, Sweet potato, Taro (Colocasia), Yam (D. alata)
OTHER VEGETABLES	Aibika, Amaranthus spp., Choko tips, Corn, Cucumber, Ferns, Highland pitpit, Kumu musong, Pumpkin tips, Tulip
FRUITS	Marita pandanus, Sugarcane
NUTS	Breadfruit, Castanopsis, Karuka (planted), Karuka (wild)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Significant
CROP SEGREGATION	Significant
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Animal skins	Minor
2 Fresh food	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In January 1987, a four week study of shifting cultivation at the Mianmin hamlets of Defambambip, Yemimbip and Beitafip (West Sepik) in which all gardens were surveyed and mapped. In June 1991, a foot traverse from Telefomin to Eliptamin station, and through the Elip Valley (West Sepik) (3 days). In May 1992, a visit to Golgobip village and traverse on foot from Golgobip to Olsobip station (2 days).

Boundary definition

The boundary with System 1507 north of Yapsei was based on fieldwork and interviews in the Yapsei area. Elsewhere the northern boundary with System 1507 was based on fieldwork in a number of Mianmin hamlets; extrapolation from the boundary at Yapsei; and Morren and Hyndman (1987). The boundary with Systems 1503, 0102/1505, 1509 and 1510 was based on walking traverses between Oksapmin, the Bak Valley and Bimin and aerial observations. The boundary with System 1502 was determined by road and walking traverses south and west of Telefomin station. The southern boundary with Western Province System 0102/1505 was determined on a walking traverse from Golgobip village to Olsobip station; and interviews at Selbang, Biangabip and Bultem villages.

Notes

This system is distinguished from Systems 1502, 1503, 0102/1505, 1507, 1509 and 1510 by different combinations of the most important and important crops. As well, fallow periods are shorter in Systems 1502 and 1510. In System 1507, sago is the most important food.

Although taro is the most important crop everywhere, the importance of sweet potato and Chinese taro varies locally. Chinese taro is an important crop in the Elip and Upper Sepik Valleys, but not in the Feramin or Mianmin areas. Sweet potato is more important in the Atbalmin area than in the Eliptamin area. In the Tifalmin area in 1970, sweet potato was estimated to contribute between 30 and 40 per cent by weight of food eaten (Wheatcroft 1975, 64). Chinese taro is planted up to 1300 m altitude. The system was previously more extensive and extended to the southern limit of the area occupied by the Ok language speakers. At lower altitudes, taro has been displaced by other crops (sweet potato, Chinese taro and cassava) since the early 1980s.

In all areas Chinese taro is planted in separate gardens. Sweet potato is usually planted separately from taro on better drained sites. Taro and sweet potato are said to be planted in the same gardens at Misinmin village near Telefomin (Brumbaugh 1980, 55), and in separate gardens in the Tifalmin area (Wheatcroft 1975, 64). Where they are planted in the same garden, they are always planted in separate sections. Chinese taro, and to a lesser extent taro, is often planted in areas disturbed by landslides. Taro blight is present up to 1600 m altitude, and is said to have arrived in the Elip Valley in the 1960s from the Mianmin area. Another disease (probably the Alomae virus) is also said to be a problem. Taro beetle (Papuana spp) is present. Household gardens contain minor plantings of taro, Chinese taro and bananas.

A number of soil fertility maintenance techniques are used. In the Elip Valley and the Telefomin area, casuarina trees are sometimes planted in taro gardens or fallows. Decomposed heaps of cleared fallow vegetation (known as 'kompos' in pidgin) are used as sites for planting taro. Trees are sometimes deliberately felled on a site a number of years prior to the cultivation of the site. Women clear and heap the cut undergrowth. Some heaps are burnt, sometimes around the base of trees to kill them, but many trees are left standing and much litter is not burnt. The sites of small fires are used to plant spring onions, winged bean and aibika. In response to severe taro blight in the Golgobip area, trees are being cut and removed from gardens. In sweet potato gardens, more trees are felled and removed than in taro gardens, but many are left standing.

In the Elip Valley and Golgobip area, a number of gardens are enclosed by one fence. In the Tifalmin area, individual gardens are fenced. Gardens in the area between Mianmin and Yapsei stations are not often fenced, except for sweet potato gardens at lower altitudes. Yams, common beans and winged beans are staked. Generally there is only one planting before fallow, but occasionally sweet potato is replanted a second time. Sweet potato is dibbled on the first planting, but where a second crop is cultivated, small mounds 20 cm high and 50 cm in diameter are commonly used.

The main source of cash is from employment (wages, remittances and gifts) at Tabubil town or the Ok Tedi mine. Vegetables, including potatoes, are purchased weekly at Eliptamin, Feramin, Telefomin and Golgobip by Min Vegetable Marketing Pty Ltd and sold to Ok Tedi mine caterers at Tabubil. Telefomin High School also purchases fresh food. Arabica coffee and cardamom are present but are not being harvested because of low prices.

National Nutrition Survey 1982/83

125 families from 9 villages were asked in April or May 1983 what they had eaten the previous day. 87 per cent reported eating sweet potato, 33 per cent taro, 6 per cent banana, 6 per cent cassava, 2 per cent sago, 2 per cent Chinese taro and none coconut. 10 per cent reported eating rice. 1 per cent reported eating fresh fish. More sweet potato was consumed than expected from the crop pattern, and less taro and Chinese taro.

Main References

Hyndman, D.C. 1979 Wopkaimin subsistence: cultural ecology in the New Guinea Highlands fringe. PhD thesis, University of Queensland, Brisbane.

Morren, G.E.B. 1986 The Miyanmin: Human Ecology of a Papua New Guinea Society. Ann Arbor, UMI Research Press.

Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

Other References

Brand, J.C., D.E. Thomas and D. Hyndman 1991 Composition of the subsistence foods of the Wopkaimin people of Papua New Guinea. Papua New Guinea Medical Journal 34, 35-48.

Brumbaugh, R.C. 1980 A secret cult in the West Sepik Highlands. PhD thesis, State University of New York, Stoneybrook.

Frodin, D.G. and D.C. Hyndman 1982 Ethnobotany of the Ok Tedi Drainage. Working Paper No. 14. In, Ok Tedi Environmental Study. Vol. 5 Population and Resource Use: Ethnobiology. Port Moresby, Maunsell and Partners, 209-340.

Gardner, D.S. 1981 Cult ritual and social organization among the Mianmin. PhD thesis, Australian National University, Canberra.

Hatanaka, S. and L.W. Bragge 1973 Habitat, isolation, and subsistence economy in the central range of New Guinea. Oceania 44, 1, 38-57.

Hope, G.S. 1983 The vegetational changes of the last 20,000 years at Telefomin, Papua New Guinea. Singapore Journal of Tropical Geography 4, 25-33.

Hyndman, D.C. 1982a Biotope gradient in a diversified New Guinea subsistence system. Human Ecology 10, 2, 219-259.

Hyndman, D.C. 1982b Population, settlement and land use. Working Paper No. 12. In, Ok Tedi Environmental Study. Vol. 5 Population and Resource Use: Ethnobiology. Port Moresby, Maunsell and Partners, 1-71.

Hyndman, D.C. 1984a Ethnobotany of Wopkaimin Pandanus: significant Papua New Guinea plant resource. Economic Botany 38, 3, 287-303.

Hyndman, D.C. 1984b Hunting and the classification of game animals among the Wopkaimin. Oceania 54, 4, 289-309.

Hyndman, D. 1986 Men, women, work, and group nutrition in a New Guinea Mountain Ok society. In Manderson, L. (ed), Shared wealth and symbol: food, culture and society in Oceania and Southeast Asia. Cambridge, Cambridge University Press, 29-48.

Hyndman, D.C. 1989 Gender in the diet and health of the Wopkaimin. In Frankel, S. and G. Lewis (eds), A Continuing Trial of Treatment. Dordrecht, Kluwer Academic Publishers, 249-275.

Hyndman, D.C. and D.G. Frodin 1980 Ethnobotany of Schefflera in the Ok Tedi region, Papua New Guinea. Ethnomedizin/Ethnomedicine 6, 1-4, 101-126.

Hyndman, D.C. and J.I. Menzies 1990 Rain forests of the Ok Tedi headwaters, New Guinea: an ecological analysis. Journal of Biogeography 17, 241-273.

Hyndman, D. and G.E.B. Morren 1990 The human ecology of the Mountain-Ok of central New Guinea: a regional and inter-regional approach. In Craig, B. and D. Hyndman (eds), Children of Afek: Tradition and Change Among the Mountain-Ok of Central New Guinea. Monograph No. 40. Sydney, Oceania, 9-26.

Hyndman, D.C., S.J. Ulijaszek and J.A. Lourie 1989 Variability in body physique, ecology, and subsistence in the Fly River region of Papua New Guinea. American Journal of Physical Anthropology 79, 1, 89-101.

Jones, B.A. 1980 Consuming society: food and illness among the Faiwol. PhD thesis, University of Virginia, Charlottesville.

Jorgensen, D. 1991 Production and the aims of exchange. Paper delivered to the conference 'The Mek and Their Neighbours' sponsored by the Max-Plank-Gesellschaft at Seewiesen, Bavaria.

Landsberg, J.J. and D.S. Gillieson 1980 Toksave bilong graun: common sense or empiricism in a folk science knowledge from Papua New Guinea. Capricornia 8, 13-23.

McSween, S. 1989 Traditional and Cash Crop Agriculture in Four Areas of Sandaun Province: A Compiled Profile and Analysis. Vanimo, Monitoring and Evaluation Unit, West Sepik Province Development Project.

Morgan, R. 1992 Vegetable production in Telefomin District. Fresh Produce News (17 April 1992) 60, 2-5.

Other References continued

Morren, G.E.B. 1977 From hunting to herding: pigs and the control of energy in montane New Guinea. In Bayliss-Smith, T.P. and R.G.A. Feachem (eds), Subsistence and Survival: Rural Ecology in the Pacific. London, Academic Press, 273-315.

Pearson, M. and B. Thistleton 1981 Taro diseases in the Hotmin area, East Sepik Province, and the Telefomin area, West Sepik Province: report of field visit, 1981. Unpublished report, Department of Primary Industry, Port Moresby.

Polier, N. 1990 Migrant Min, miners and gardeners: social movement and social transformation among the Faiwolmin of Golgobip. Paper delivered to the conference 'The Med and Their Neighbours' sponsored by the Max-Planck-Gesellschaft at Seewiesen, Bavaria.

Wheatcroft, W. 1975 The legacy of Afekan: cultural symbolic interpretations of religion among the Telefomin of New Guinea. PhD thesis, University of Chicago, Chicago.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 2	**Subsystem No.** 1 **of** 1
Districts 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 18
Population 927	**Population density** 52 **persons/sq km**	**Population absent** 9 **%**

System Summary

Located south of the Telefomin airstrip. Tall woody regrowth fallows, mostly 8-15 years old, and some tall grass fallows, many of which contain previously planted casuarina trees, are cleared. Wood is burnt or taken for firewood, but much litter remains on the soil surface after clearing. Sweet potato and taro are the most important crops; Chinese taro is an important crop; other crops are banana and cassava. Sweet potato and taro are segregated within gardens. Chinese taro is grown in separate gardens near the Sepik River. Only one planting is made before fallowing. A minority of sweet potato gardens are located in areas of short grass and here a second planting may be made.

Extends across provincial border to System(s) None

Altitude range (m) 1000-1800 **Slope** Gentle (2-10 degrees)

CROPS

STAPLES DOMINANT	Sweet potato, Taro (Colocasia)
STAPLES SUBDOMINANT	Chinese taro
STAPLES PRESENT	Banana, Cassava, Chinese taro, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Chinese cabbage, Choko tips, Corn, Cucumber, Highland pitpit, Pumpkin tips
FRUITS	Banana, Marita pandanus, Sugarcane
NUTS	Karuka (planted)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	5-15 years
CROPPING PERIOD	1 planting
R VALUE	9 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Significant
CROP SEGREGATION	Significant
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	Minor
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Fresh food	Significant
2 Firewood	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In May 1982, garden inspection near Telefomin (1 day). In June 1991, garden inspections in three communities near Telefomin (1.5 days).

Boundary definition

Boundaries with System 1501 were determined by road and walking traverses south and west of Telefomin station.

Notes

This system covers a small area south of Telefomin and is surrounded by the larger System 1501, from which it has probably evolved through intensification. The system is distinguished from System 1501 where fallow periods are longer and sweet potato is less important than here. People say that sweet potato and taro are their most important crops, but observations suggest that sweet potato is the most important. The system is changing; in the 1960s taro was still the most important crop and the importance of sweet potato has increased notably since then, and cassava has also been adopted. Jorgensen (1991) attributes some of this change to the influence of the Ok Tedi mine; the need to increase pig production because of the larger amounts of cash in circulation, and the labour demands placed on females by male absenteeism; but it was under way before the establishment of the mine. Most gardens are made in fallows of 10 to 15 m tall woody regrowth, but some are made in fallows of mixed woody regrowth and tall cane grass, and smaller areas of short grasses are used for sweet potato only. Only in the short grasslands are two plantings made before fallowing. Elsewhere only one planting is made before fallowing. Sweet potato is usually planted without mounding, but mounds up to 50 cm tall and 100 cm across are sometimes used. People say that they started to mound after seeing the practice in the Tari area. Sweet potato, taro and Chinese taro are usually planted in separate gardens. Where sweet potato and taro are planted in the same garden they are segregated. Casuarina plantings in fallows are more common here than in the surrounding System 1501 and are a feature of the landscape. People living in this area plant some gardens in distant locations in System 1501. Chinese taro gardens are made near the Sepik River.

Some fresh food is sold to Min Vegetable Marketing Pty Ltd and at Telefomin High School. A little firewood is sold at Telefomin station.

National Nutrition Survey 1982/83

No villages from this system were included in the survey.

Main References

Hyndman, D. and G.E.B. Morren 1990 The human ecology of the Mountain-Ok of central New Guinea: a regional and inter-regional approach. In Craig, B. and D. Hyndman (eds), Children of Afek: Tradition and Change Among the Mountain-Ok of Central New Guinea. Monograph No. 40. Sydney, Oceania, 9-26.

Jorgensen, D. 1991 Production and the aims of exchange. Paper delivered to the conference 'The Mek and Their Neighbours' sponsored by the Max-Plank-Gesellschaft at Seewiesen, Bavaria.

Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

Other References

Hope, G.S. 1983 The vegetational changes of the last 20,000 years at Telefomin, Papua New Guinea. Singapore Journal of Tropical Geography 4, 25-33.

Jorgensen, D. 1983 Principal Telefol gardening and hunting areas. In Swadling, P. (ed), How Long Have People Been in the Ok Tedi Impact Area? Port Moresby, Papua New Guinea National Museum Record No. 8, 130-131.

Jorgensen, D. 1991 Big men, great men and women: alternative logics of gender difference. In Godelier, M. and M. Strathern (eds), Big Men and Great Men: Personifications of Power in Melanesia. Cambridge, Cambridge University Press, 256-271.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 3	**Subsystem No.** 1 **of** 2
Districts 4 Telefomin	**Subsystem Extent** 75 %	**Area (sq km)** 217
Population 3,395	**Population density** 16 **persons/sq km**	**Population absent** 10 **%**

System Summary

Located around Oksapmin and in the Bak Valley. Two subsystems are distinguished on the basis of fallow vegetation, fallow period and crops grown. For the entire system, sweet potato is the most important crop and taro is an important crop. In this subsystem, mixed tall woody regrowth and cane grass fallows, 8-15 years old, are cleared. Cut vegetation is heaped and some burnt, but much remains on the soil surface. Sweet potato is the most important crop; other crops are banana and taro. It is cultivated without tillage or mounds. Only one planting is made before fallowing. Generally, this subsystem is located below 1900 m altitude and the second subsystem is found above 1900 m.

Extends across provincial border to System(s) None

Altitude range (m) 1200-2200 **Slope** Steep (10-25 degrees)

CROPS

STAPLES DOMINANT	Sweet potato
STAPLES SUBDOMINANT	None
STAPLES PRESENT	Banana, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Bean (common), Cabbage, Corn, Cucumber, Highland pitpit, Pumpkin tips
FRUITS	Marita pandanus, Sugarcane
NUTS	Karuka (planted), Karuka (wild)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Grass/woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	5-15 years
CROPPING PERIOD	1 planting
R VALUE	9 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Minor
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	Minor
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Fresh food	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	Minor
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	Minor
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In November 1979, a foot traverse from Tekin mission to the Bak Valley and from Tekin to Oksapmin station (4 days). In May 1992, foot traverse from Bimin village to Oksapmin via the Bak Valley and Tekin (3 days): 47 gardens were observed.

Boundary definition

Boundaries with Systems 1509 and 1510 were determined by foot traverses from Tekin mission to the Bak Valley and Oksapmin station; and from Bimin airstrip to Tekin and Oksapmin. The boundary with System 1505 was observed from the air.

Notes

This system is distinguished from System 1505 where sweet potato, taro, Chinese taro and cassava are important crops; from System 1509 where both sweet potato and taro are the most important crops; and from System 1510 where planted casuarina fallows are significant.

Sweet potato is replacing taro as the staple food. Villagers said that taro was the main staple food in the Bak Valley until about 1940 (Bourke 1979, 5). It was estimated in 1992 that about 20 to 30 per cent of garden area was planted with taro. People have drained a number of alluvial areas and planted sweet potato in mounds since 1970 (Cape 1981, 154). Some casuarina trees are planted in sweet potato gardens. This practice was unusual before about 1980 but it is becoming increasingly important.

Fresh food is sold to Tabubil, the Ok Tedi mine township (about 3 tonnes per week in 1990 and 1991). Most came from the Tekin Valley, with some from areas near to Oksapmin. However the major source of money is employment at Tabubil, and gifts and remittances from workers.

National Nutrition Survey 1982/83

80 families from 2 villages were asked in May 1983 what they had eaten the previous day. 98 per cent reported eating sweet potato, 10 per cent taro, 1 per cent cassava, and none banana, Chinese taro, yam, coconut or sago. 6 per cent reported eating rice. None reported eating fresh fish. This is similar to the crop pattern.

Main References

Cape, N. 1981 Agriculture. In Weeks, S.G. (ed), Oksapmin: Development and Change. Port Moresby, University of Papua New Guinea, 149-190.

Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

Other References

Bourke, R.M. 1979 Report on a brief visit to Oksapmin sub-district to examine subsistence agriculture. Unpublished report, Highlands Agricultural Experiment Station, Aiyura.

MacKenzie, M.A. 1991 Androgynous Objects: String Bags and Gender in Central New Guinea. Chur, Switzerland, Harwood Academic Publishers.

Morgan, R. 1992 Vegetable production in Telefomin District. Fresh Produce News (17 April 1992) 60, 2-5.

PROVINCE 15 West Sepik **AGRICULTURAL SYSTEM No.** 3 **Subsystem No.** 2 **of** 2

Districts 4 Telefomin **Subsystem Extent** 25 %

System Summary

This subsystem is generally located above 1900 m. The undergrowth beneath tall woody fallows, older than 20 years, is cleared and taro is planted. Trees are gradually removed or killed as the crop matures. Gardens are progressively extended beneath standing trees over time, until the whole site has been cultivated. Only one planting is made before fallowing. This subsystem is very similar to System 1501.

Extends across provincial border to System(s) None

Altitude range (m) 1200-2200 **Slope** Steep (10-25 degrees)

CROPS

STAPLES DOMINANT	Taro (Colocasia)
STAPLES SUBDOMINANT	None
STAPLES PRESENT	Taro (Colocasia)
OTHER VEGETABLES	Bean (common), Cabbage, Corn, Cucumber, Highland pitpit, Pumpkin tips
FRUITS	Marita pandanus, Sugarcane
NUTS	Karuka (planted), Karuka (wild)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	None
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	None

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Fresh food	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Minor
STAKING OF CROPS	None
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

PROVINCE 15 West Sepik **AGRICULTURAL SYSTEM No.** 3 **Subsystem No.** 2 **of** 2

OTHER DOCUMENTATION

Notes

This subsystem is similar in most aspects to System 1501 to the west. It is probable that System 1501 was the `original' system, which is being displaced by a more intensive sweet potato system. This is resulting in a reduction in fallow length and changing fallow vegetation from tall woody regrowth to woody regrowth and tall grass (subsystem 1). Casuarina trees are planted in some fallows following the cultivation of taro in this subsystem.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 4	**Subsystem No.** 1 **of** 1
Districts 3 Amanab, 5 Lumi, 6 Nuku	**Subsystem Extent** 100 %	**Area (sq km)** 7822
Population 13,851	**Population density** 2 **persons/sq km**	**Population absent** 9 **%**

System Summary

Located in areas of swamp and frequent flooding north and south of the Sepik River and west of Ambunti. Sago is the most important food. Hunting, fishing and the collection of wild vegetable foods are important activities. Agriculture is not an important source of food. Small food gardens are made by a minority of households (less than 30 per cent). Tall woody regrowth, greater than 20 years old, is cleared and burnt. Crops grown are banana, taro and sweet potato. Only one planting is made before fallow.

Extends across provincial border to System(s) 1417

Altitude range (m) 50-150 **Slope** Gentle (2-10 degrees)

CROPS

STAPLES DOMINANT	Sago
STAPLES SUBDOMINANT	None
STAPLES PRESENT	Banana, Sago, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Amaranthus spp., Corn, Cucumber, Ferns, Kangkong, Lowland pitpit, Nasturtium spp., Pumpkin tips, Tulip
FRUITS	Marita pandanus, Pawpaw, Sugarcane, Ton
NUTS	Breadfruit, Coconut, Pangium edule
NARCOTICS	Betel nut (lowland), Betel pepper (lowland), Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	None
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	None

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Crocodile	Minor
2 Tobacco	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Very significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	None
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In June 1991, a visit to the Edwaki area of West Sepik (2 days); information from Kelm and Kelm (1980). The East Sepik part of this system was not visited.

Boundary definition

The boundaries with Systems 1402/1507 and 1511 were based on field visits in the Edwaki area; from Kelm and Kelm (1980), Townsend (1969) and Guddemi (1992); and map interpretation of areas of low gradient, poorly drained topography.

Notes

This system is distinguished from the adjacent systems 1402/1507 and 1511 because agriculture is more important in those systems.

Kelm and Kelm (1980) describe this system from the West Sepik villages of Kweiftim and Abrau. They found `a general disinterest shown by a large part of the inhabitants ... in regard to ... cultivation'. People may not visit their gardens for months and although the failure of crops is frequent, to a large extent because of the lack of interest in agriculture, it is not a source of great concern to the gardeners. 'Productive activities such as hunting, the gaining of sago and gathering are ... sufficient on their own'. People are said to be now planting more gardens than previously. This is because game is becoming scarce and settlements are moving less to enable people to remain near health facilities and schools. Where sweet potato is grown, it is planted in small mounds 20 to 40 cm high and 40 to 100 cm in diameter. Some gardens are fenced. Mounding and fencing are recent adoptions. Fishing, an important source of food, is more important between May and August (drier months).

In places with better access, crocodile skins, live crocodiles and some Robusta coffee are marketed in very small amounts. By 1991, little coffee was being harvested because of low prices. The coffee was initially planted in food gardens. Tobacco is sold in local markets, especially to people who live near the Sepik River. Chillies have been grown but there was no buying in 1990 or 1991. Some fresh food is sold at Edwaki market.

National Nutrition Survey 1982/83

121 families from 12 villages were asked in May or August 1983 what they had eaten the previous day. 91 per cent reported eating sago, 55 per cent banana, 12 per cent taro, 9 per cent sweet potato, 5 per cent coconut, 2 per cent Chinese taro, 2 per cent cassava and none yam. 4 per cent reported eating rice. 23 per cent reported eating fresh fish. This is similar to the crop pattern.

Main References

Kelm, A. and H. Kelm 1980 Sago und Schwein: Ethnologie von Kweiftim und Abrau in Nordost-Neuguinea. Wiesbaden, Franz Steiner Verlang GMBH.

McSween, S. 1989 Traditional and Cash Crop Agriculture in Four Areas of Sandaun Province: A Compiled Profile and Analysis. Vanimo, Monitoring and Evaluation Unit, West Sepik Province Development Project.

Townsend, P.K.W. 1969 Subsistence and social organization in a New Guinea society. PhD thesis, University of Michigan, Ann Arbor.

Other References

Guddemi, P. 1992 When horticulturalists are like hunter-gatherers: the Sawiyano of Papua New Guinea. Ethnology 31, 4, 303-314.

Haantjens, H.A., P.C. Heyligers, J.R. McAlpine, J.C. Saunders and R.H. Fagan 1972 Lands of the Aitape-Ambunti area, Papua New Guinea. Land Research Series No. 30, Commonwealth Scientific and Industrial Research Organization, Melbourne.

Townsend, P.K. 1971 New Guinea sago gatherers: a study of demography in relation to subsistence. Ecology of Food and Nutrition 1, 19-24.

Townsend, P.K. 1974 Sago production in a New Guinea economy. Human Ecology 2, 3, 217-236.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 5	**Subsystem No.** 1 **of** 1
Districts 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 144
Population 96	**Population density** 1 **persons/sq km**	**Population absent** 14 **%**

System Summary

Located on the southern side of the main ranges to just south of Tabubil in Western Province; and in the Ok Om Valley upstream from Sisamin village in West Sepik Province. Tall woody regrowth, more than 20 years old, is felled and heaped. Where sweet potato is planted, the heaps are burnt. Where taro is planted, there is little burning. Taro, sweet potato, Chinese taro and cassava are important crops; other crops are banana and sago. Before the early 1980s, taro was the most important crop, with some sweet potato grown. Since then, sweet potato, Chinese taro and cassava have become important crops. Meanwhile taro has declined in importance, though it is still grown, generally at higher altitudes. While the relative significance of the four important crops varies, sweet potato is generally the most common. There is no tillage, and only one planting is made before fallowing. Sweet potato, taro and Chinese taro (and sometimes cassava) are usually grown in separate gardens.

Extends across provincial border to System(s) 0102

Altitude range (m) 400-1800 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	None
STAPLES SUBDOMINANT	Cassava, Chinese taro, Sweet potato, Taro (Colocasia)
STAPLES PRESENT	Banana, Cassava, Chinese taro, Sago, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Choko tips, Corn, Cucumber, Ferns, Highland pitpit, Lowland pitpit, Pumpkin tips, Tulip
FRUITS	Marita pandanus, Sugarcane, Pawpaw, Pineapple
NUTS	Breadfruit
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Very significant
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	None

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Animal skins	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In May 1992, traverse on foot from Golgobip village to Olsobip station; interviews in Olsobip area and garden visits; visits to Selbang and Biangabip villages; road traverse from Tabubil to Finalbin village (3 days). Information obtained from Atenkit (near Irian Jaya border) and Bultem villagers. In January-March 1996, an eight week walking traverse from Kiunga to Telefomin via the Upper Fly River, Biangabip and Boluvip. The West Sepik Province part of the system was not visited and the description is based on Hatanaka and Bragge (1973).

Boundary definition

The southern boundary with System 0103 coincides with the language boundary between Ok and other language groups, and is agriculturally distinct. It was determined by a road traverse between Kiunga and Tabubil; a walking traverse from Kiunga to Telefomin; and from Morren and Hyndman (1987). The boundary with System 0101/1501, where taro is the most important crop, was determined by a walking traverse between Golgobip village and Olsobip station; and interviews at Biangabip, Selbang and Finalbin villages. The boundary with System 1503 was determined from aerial observations. The boundary with System 0701 is defined as the provincial boundary.

Notes

This system is distinguished from System 0103 where sago and banana are the most important foods. It is distinguished from other nearby systems (0101/1501, 1503, 0729) by the combination of the most important and important crops.

This system is evolving from one in which taro was the most important crop (System 0101/1501) to one in which sweet potato, cassava and Chinese taro are displacing taro. The decreasing significance of taro is said to be due to problems with taro blight and taro beetle. A study of food intake at two villages in the Murray River area in 1986 showed that sweet potato was the dominant food in the September-December period (Kuchikura 1990). At Bultem village in the 1970s, Hyndman (1979, 194-5) reported that fallow vegetation was not burnt and gardens were not fenced. Both practices are now common, and are associated with the change from taro to other root crops. Extensive karuka pandanus stands (both cultivated and wild) exist at higher altitudes (above 1600 m). Sweet potato is generally planted without mounding, but some is planted in mounds around 30 cm high.

At Biangabib village, sweet potato is sometimes planted in mounds 1-1.5 m in diameter and about 80 cm high. Compost is not used in them. This practice was introduced by highland pastors in the early 1970s. The pastors are no longer living there, but the practice was still spreading in 1996.

People living north of Tabubil receive very large cash payments as royalties from the Ok Tedi mine. They now consume significant quantities of imported food. Elsewhere in the system the main source of cash is gifts from people working at Ok Tedi. Some fresh food is sold to the Tabubil wholesale vegetable market and in roadside and town markets.

National Nutrition Survey 1982/83

No villages from this system were included in the survey.

Main References

Hyndman, D.C. 1979 Wopkaimin subsistence: cultural ecology in the New Guinea Highlands fringe. PhD thesis, University of Queensland, Brisbane.
Kuchikura, Y. 1990 Subsistence activities, food use, and nutrition among the Mountain Ok in Central New Guinea. Man and Culture in Oceania 6, 113-137.
Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

Other References

Barth, F. 1975 Ritual and Knowledge among the Baktaman of New Guinea. New Haven, Yale University Press.
Brand, J.C., D.E. Thomas and D. Hyndman 1991 Composition of the subsistence foods of the Wopkaimin people of Papua New Guinea. Papua New Guinea Medical Journal 34, 35-48.
Frodin, D.G. and D.C. Hyndman 1982 Ethnobotany of the Ok Tedi Drainage. Working Paper No. 14. In, Ok Tedi Environmental Study. Vol. 5 Population and Resource Use: Ethnobiology. Port Moresby, Maunsell and Partners, 209-340.

Other References continued

Hatanaka, S. and L.W. Bragge 1973 Habitat, isolation, and subsistence economy in the central range of New Guinea. Oceania 44, 1, 38-57.

Hyndman, D.C. 1982a Biotope gradient in a diversified New Guinea subsistence system. Human Ecology 10, 2, 219-259.

Hyndman, D.C. 1982b Population, settlement and land use. Working Paper No. 12. In, Ok Tedi Environmental Study. Vol. 5 Population and Resource Use: Ethnobiology. Port Moresby, Maunsell and Partners, 1-71.

Hyndman, D.C. 1984a Ethnobotany of Wopkaimin Pandanus: significant Papua New Guinea plant resource. Economic Botany 38, 3, 287-303.

Hyndman, D.C. 1984b Hunting and the classification of game animals among the Wopkaimin. Oceania 54, 4, 289-309.

Hyndman, D. 1986 Men, women, work, and group nutrition in a New Guinea Mountain Ok society. In Manderson, L. (ed), Shared wealth and symbol: food, culture and society in Oceania and Southeast Asia. Cambridge, Cambridge University Press, 29-48.

Hyndman, D.C. 1989 Gender in the diet and health of the Wopkaimin. In Frankel, S. and G. Lewis (eds), A Continuing Trial of Treatment. Dordrecht, Kluwer Academic Publishers, 249-275.

Hyndman, D.C. and D.G. Frodin 1980 Ethnobotany of Schefflera in the Ok Tedi region, Papua New Guinea. Ethnomedizin/Ethnomedicine 6, 1-4, 101-126.

Hyndman, D.C. and J.I. Menzies 1990 Rain forests of the Ok Tedi headwaters, New Guinea: an ecological analysis. Journal of Biogeography 17, 241-273.

Hyndman, D. and G.E.B. Morren 1990 The human ecology of the Mountain-Ok of central New Guinea: a regional and inter-regional approach. In Craig, B. and D. Hyndman (eds), Children of Afek: Tradition and Change Among the Mountain-Ok of Central New Guinea. Monograph No. 40. Sydney, Oceania, 9-26.

Hyndman, D.C., S.J. Ulijaszek and J.A. Lourie 1989 Variability in body physique, ecology, and subsistence in the Fly River region of Papua New Guinea. American Journal of Physical Anthropology 79, 1, 89-101.

Kazipam, P. 1985 Ok Tedi garden survey. Report No. PA/03/85-12, Environment Department, Ok Tedi Mining, Tabubil.

Lourie, J.A., T. Taufa, J. Kattani and W. Anderson 1986 The Ok Tedi health and nutrition project, Papua New Guinea: physique, growth and nutritional status of the Wopkaimin of the Star Mountains. Annals of Human Biology 13, 6, 517-536.

Morren, G.E.B. 1986 The Miyanmin: Human Ecology of a Papua New Guinea Society. Ann Arbor, UMI Research Press.

Pernetta, J.C. and D.C. Hyndman 1982 Ethnozoology of the Ok Tedi Drainage. Working Paper No. 13. In, Ok Tedi Environmental Study. Vol. 5. Population and Resource Use: Ethnobiology. Port Moresby, Maunsell and Partners, 73-207.

Ulijaszek, S.J., D.C. Hyndman, J.A. Lourie and A. Pumuye 1987 Mining, modernisation and dietary change among the Wopkaimin of Papua New Guinea. Ecology of Food and Nutrition 20, 143-156.

Ulijaszek, S.J., J.A. Lourie, T. Taufa and A. Pumuye 1989 The Ok Tedi Health and Nutrition Project, Papua New Guinea: adult physique of three populations in the North Fly region. Annals of Human Biology 16, 1, 61-74.

Ulijaszek, S.J. and A. Pomuye 1985 Adequacy of energy and protein intake amongst adult Wopkaimin in the Ok Tedi region. Papua New Guinea Medical Journal 28, 4, 295-301.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 6	**Subsystem No.** 1 **of** 1
Districts 2 Vanimo	**Subsystem Extent** 100 %	**Area (sq km)** 32
Population 1,883	**Population density** 59 **persons/sq km**	**Population absent** 23 **%**

System Summary

Located along the coast from Vanimo west to Wutung village and extending into Irian Jaya. Tall woody regrowth, generally more than 20 years old, is cleared, cut and burnt. Large gardens, made by a number of households, and smaller individual gardens are made. Sago is an important food; banana, sweet potato, coconut and taro are important crops; other crops are cassava, Chinese taro and yam (D. esculenta). Only one planting is made before fallowing. Taro, sweet potato and Chinese taro are generally grown in separate parts of gardens.

Extends across provincial border to System(s) None

Altitude range (m) 0-100 **Slope** Gentle (2-10 degrees)

CROPS

STAPLES DOMINANT	None
STAPLES SUBDOMINANT	Banana, Coconut, Sago, Sweet potato, Taro (Colocasia)
STAPLES PRESENT	Banana, Cassava, Chinese taro, Coconut, Sago, Sweet potato, Taro (Colocasia), Yam (D. esculenta)
OTHER VEGETABLES	Aibika, Amaranthus spp., Chinese cabbage, Corn, Cucumber, Kumu musong, Lowland pitpit, Tulip, Balbal
FRUITS	Pawpaw, Sugarcane, Ton
NUTS	Breadfruit
NARCOTICS	Betel nut (lowland), Betel pepper (lowland), Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	None
CROP SEGREGATION	Significant
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	None

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Betel nut	Significant
2 Fresh food	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Very significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	None
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In both May 1982 and June 1991, traverses by road from Vanimo to Wutung village (1 day).

Boundary definition

The boundary with System 1511 was determined by road traverses from Vanimo to Wutung village and Vanimo to Bewani station.

Notes

This system was distinguished from System 1511 where sago is the most important food and agriculture of lesser significance.

There is much variation in fallow ages and hence fallow vegetation. Fallow periods ranged from 5 to 40 years with about half the gardens observed in 1991 falling into the range 6 to 15 years and about half between 20 and 40 years. Large gardens had longer fallows and small individual gardens had shorter fallows, which suggests communal clearing of taller forest, and individuals taking advantage of lower fallow vegetation for family gardens. In the 1930s Thomas (1941, 165, 175) noted that sago was the staple food and that few root crops were grown along the Vanimo coast. It is possible that root crop cultivation has increased since then. Considering both the coastal and the inland areas, French (1988) also reported that sago was the staple food.

A wide range of vegetable crops is planted. No information on seasonal planting was obtained but gardens are planted seasonally in System 1507 to the south and it is likely to occur here too. Large gardens are all fenced, while smaller individual gardens are commonly not. Yams are staked to 3 m. Sweet potato is planted in small mounds around 30 cm high. Fresh food and betel nut is sold at Vanimo. A small amount of cocoa and some crocodile skins are produced and sold.

National Nutrition Survey 1982/83

93 families from 2 villages were asked in May 1983 what they had eaten the previous day. 69 per cent reported eating sago, 59 per cent coconut, 39 per cent banana, 28 per cent taro, 26 per cent sweet potato,10 per cent yam, 4 per cent Chinese taro and none cassava. 66 per cent reported eating rice. 62 per cent reported eating fresh fish. This is similar to the crop pattern.

Main References

None.

Other References

French, B. 1988 Gardening systems - Vanimo area. In Sharrock, S. (ed), Report on banana germplasm collecting mission to Papua New Guinea 27 February 1988 to 22 March 1988. Unpublished report. Nambour, Maroochy Horticultural Research Station, 23.

Haantjens, H.A., P.C. Heyligers, J.R. McAlpine, J.C. Saunders and R.H. Fagan 1972 Lands of the Aitape-Ambunti area, Papua New Guinea. Land Research Series No. 30, Commonwealth Scientific and Industrial Research Organization, Melbourne.

Thomas, K.H. 1941 Notes on the natives of the Vanimo coast, New Guinea. Oceania 12, 2, 163-186.

PROVINCE 15 West Sepik **AGRICULTURAL SYSTEM No.** 7 **Subsystem No.** 1 **of** 1

Districts 1 Aitape, 3 Amanab, 5 Lumi, 6 Nuku **Subsystem Extent** 100 % **Area (sq km)** 3345
Population 52,044 **Population density** 16 **persons/sq km** **Population absent** 17 **%**

System Summary

A very extensive system located in the Aitape, Lumi and Nuku areas of West Sepik Province; and the eastern end of the Prince Alexander Mountains along the north coast and in the Sepik Valley away from the river in East Sepik Province. The primary source of food everywhere is sago, some of which is planted and some of which is managed, naturally occurring stands. The importance of agriculture differs considerably from place to place, in the size of plots cultivated and in the labour invested in cultivating them. Agriculture is most important in the Torricelli Mountain foothills and at Woginara. Gardens are cleared in fallows of tall woody regrowth, generally more than 15 years old. Fallow vegetation is cut, dried and burnt. Only one planting is made before fallowing. Banana, taro, coconut and Chinese taro are important crops; other crops include yam (D. esculenta and D. alata) and sweet potato. Game and fish are important sources of food, but their significance varies considerably. Food gardens are planted at the end of the drier season.

Extends across provincial border to System(s) 1402

Altitude range (m) 0-800 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	Sago
STAPLES SUBDOMINANT	Banana, Chinese taro, Coconut, Taro (Colocasia)
STAPLES PRESENT	Banana, Chinese taro, Coconut, Sago, Sweet potato, Taro (Colocasia), Yam (D. alata), Yam (D. esculenta)
OTHER VEGETABLES	Aibika, Amaranthus spp., Bean (winged), Corn, Kumu musong, Lowland pitpit, Pumpkin tips, Tulip, Bean (snake)
FRUITS	Mango, Marita pandanus, Pawpaw, Pineapple, Sugarcane, Ton
NUTS	Breadfruit, Galip, Okari
NARCOTICS	Betel nut (lowland), Betel pepper (lowland), Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Minor
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Cocoa	Minor
2 Coffee Robusta	Minor
3 Fresh food	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Very significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	Minor
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	Minor
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Minor
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	Significant
SEASONAL SEC'DARY CROPS	Significant

OTHER DOCUMENTATION

Survey description

In May 1982, visits to Lumi and Nuku areas (3 days). In July 1991, road traverses from Maprik to Lumi (two parties for 3 days); road traverse from Wewak to Aitape (3 days). In June-July 1991, road traverses from Wewak to Turubu, Angoram, Maprik, Pagwi; and traverses along Sepik, Yuat, Keram Rivers. Aerial reconnaissance in July 1991.

Boundary definition

The boundaries with Systems 1403, 1411 and 1412 were determined from extensive road traverses. South of the Sepik River, it was distinguished from Systems 1413 and 1418 by boat traverses on the Sepik, Keram and Yuat Rivers. The system was distinguished from System 1420 after visits to the Wewak Islands. It is distinguished from System 1415, where agriculture is more important, following Dornstreich (1973, 1977). The boundary with System 1419 was based on a traverse in the Keram River and is somewhat arbitrary. The southern boundary with System 1501 was based on interviews and fieldwork in the Yapsei area. The boundary with System 1504/1417 was based on field visits in the Edwaki area; from Kelm and Kelm (1980), Townsend (1969) and Guddemi (1992); and map interpretation of areas of low gradient, poorly drained topography. The boundary with System 1508 was based on a road traverse from Nuku station to Seim mission and Seim to Klafle village; and interviews at Arokasami village (East Sepik).

Notes

This system is distinguished from Systems 1403, 1411, 1412, 1415, 1501/0101 and 1508 where agriculture is more important than here; it is distinguished from System 1417/1504 where agriculture is less important; it is distinguished from the riverine Systems 1413 and 1418 which are innundated annually. The system is very similar to Systems 1419 and 1420 but is distinguished by small differences in the important crops.

The distinguishing feature of this system is the importance of sago as a source of food and the mixture of supplementary agricultural crops. The significance of the agricultural crops varies locally in terms of the size of gardens, the care taken in cultivation and the importance of individual crops. Tulip is everywhere the most common green vegetable. Soil retention barriers (small logs laid along the contour), are used in the Nuku-Lumi area.

Cocoa is the most important source of cash income. Some fresh food and Robusta coffee is also sold. Other sources include: copra (in some coastal locations), Arabica coffee (in the Lumi area), tobacco, fish, chillies, rice (in the Nuku area), chickens, firewood and pigs.

Cocoa is the most important source of cash income. Some fresh food and Robusta coffee is also sold. Other sources include; copra (in some coastal locations), arabica coffee (in the Lumi area), tobacco, fish, chillies, rice (in the Nuku area), chickens, firewood and pigs.

National Nutrition Survey 1982/83

727 families from 37 villages were asked in April, May, June, July or September 1983, what they had eaten the previous day. 94 per cent reported eating sago, 51 per cent coconut, 20 per cent taro, 19 per cent banana, 17 per cent sweet potato, 6 per cent yam, 1 per cent Chinese taro and none cassava. 8 per cent reported eating rice. 22 per cent reported eating fresh fish. This is similar to the crop pattern except for the lower than expected consumption of Chinese taro, and the higher than expected sweet potato consumption.

Main References

Fountain, O.C. 1966 Wulukum: land, livelihood and change in a New Guinea village. MA thesis, Victoria University, Wellington.

Haantjens, H.A., J.M. Arnold, J.R. McAlpine, J.A. Mabbutt, E. Reiner, R.G. Robbins and J.C. Saunders 1968 Lands of the Wewak-Lower Sepik area, Territory of Papua and New Guinea. Land Research Series No. 22, Commonwealth Scientific and Industrial Research Organization, Melbourne.

Quin, F.M. 1984 Farming systems of East Sepik Province, Papua New Guinea. Unpublished report, East Sepik Rural Development Project, Wewak.

Other References

Dornstreich, M.P. 1973 An ecological study of Gadio Enga (New Guinea) subsistence. PhD thesis, Columbia University, New York.

Dornstreich, M.P. 1977 The ecological description and analysis of tropical subsistence patterns: an example from New Guinea. In Bayliss-Smith, T.P. and R. Feachem (eds), Subsistence and Survival: Rural Ecology in the Pacific. London, Academic Press, 245-271.

Gerstner, P.A. 1939 Der yams-anbau im But-Bezirk Neuguineas. Anthropos 34, 246-266.

Guddemi, P. 1992 When horticulturalists are like hunter-gatherers: the Sawiyano of Papua New Guinea. Ethnology 31, 4, 303-314.

Haantjens, H.A., P.C. Heyligers, J.R. McAlpine, J.C. Saunders and R.H. Fagan 1972 Lands of the Aitape-Ambunti area, Papua New Guinea. Land Research Series No. 30, Commonwealth Scientific and Industrial Research Organization, Melbourne.

Hatanaka, S. and L.W. Bragge 1973 Habitat, isolation, and subsistence economy in the central range of New Guinea. Oceania 44, 1, 38-57.

Kelm, A. and H. Kelm 1980 Sago und Schwein: Ethnologie von Kweiftim und Abrau in Nordost-Neuguinea. Wiesbaden, Franz Steiner Verlang GMBH.

Leach, G.J. 1988 Bush food plants of the Blackwater and Karawari Rivers area, East Sepik Province, Papua New Guinea. Science in New Guinea 14, 2, 95-106.

Lewis, G. 1975 Knowledge of Illness in a Sepik Society: a Study of the Gnau, New Guinea. London, The Athlone Press.

McSween, S. 1989 Traditional and Cash Crop Agriculture in Four Areas of Sandaun Province: A Compiled Profile and Analysis. Vanimo, Monitoring and Evaluation Unit, West Sepik Province Development Project.

Salfield, J.R. 1973 Nutritional survey work, Sepik Districts, 1973. Unpublished report, Public Health Department, Wewak.

Townsend, P.K.W. 1969 Subsistence and social organization in a New Guinea society. PhD thesis, University of Michigan, Ann Arbor.

West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 8	**Subsystem No.** 1 **of** 1
Districts 6 Nuku	**Subsystem Extent** 100 %	**Area (sq km)** 93
Population 3,320	**Population density** 36 **persons/sq km**	**Population absent** 9 **%**

System Summary

Located in the area of Seim mission. Tall woody regrowth, more than 20 years old, is cleared, cut and burnt. Yam (D. esculenta) is the most important crop; banana, taro, planted sago, coconut and yam (D. alata) are important crops; other crops are Chinese taro and sweet potato. Only one planting is made before fallowing. Most gardens are planted between December and February. Yam is grown on stakes.

Extends across provincial border to System(s) None

Altitude range (m) 100-500 **Slope** Steep (10-25 degrees)

CROPS

STAPLES DOMINANT	Yam (D. esculenta)
STAPLES SUBDOMINANT	Banana, Coconut, Sago, Taro (Colocasia), Yam (D. alata)
STAPLES PRESENT	Banana, Chinese taro, Coconut, Sago, Sweet potato, Taro (Colocasia), Yam (D. alata), Yam (D. esculenta)
OTHER VEGETABLES	Aibika, Amaranthus spp., Bean (winged), Corn, Cucumber, Kumu musong, Lowland pitpit, Pumpkin tips, Tulip, Bean (snake)
FRUITS	Mango, Marita pandanus, Pawpaw, Pineapple, Sugarcane, Ton
NUTS	Breadfruit, Galip
NARCOTICS	Betel nut (lowland), Betel pepper (lowland), Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	None
CROP SEGREGATION	Minor
CROP SEQUENCES	Minor
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	Minor
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Cocoa	Minor
2 Coffee Robusta	Minor
3 Rice	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Very significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	Minor
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Very significant
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	Very significant
SEASONAL SEC'DARY CROPS	Very significant

OTHER DOCUMENTATION

Survey description

In May 1982, visit to Seim and Nuku areas (1 day). In July 1991, visits by two parties along roads from Nuku station to Seim, Namblo, Yiminum, Yiliwombuk and Sulupnuku villages (1 day).

Boundary definition

The boundary with System 1402/1507 was determined by road traverses from Nuku station to Seim mission, and from Seim to Klafle village; and by interviews at Arokasami village (East Sepik). The eastern boundary with System 1411, which is the Bongos River, was determined by fieldwork on both sides of the river.

Notes

This system was distinguished from System 1402/1507 where sago is the most important food and agriculture of lesser importance. It is very similar to System 1411, but there two plantings are made before fallowing.

A few people now place ton leaves in the yam planting holes. This practice is spreading slowly from East Sepik System 1410, where all growers use ton leaves. There is also a tendency to extend the cultivation period by planting a crop of sweet potato or yam (D. alata) after the D. esculenta yam crop. Gardens are planted seasonally, between December and February. Villagers say that they harvest mostly taro and yam (D. alata) in May-June and yam (D. esculenta) in July-August. Sago and banana are more important in the period between planting and the first harvest. The only published description is found in the West Sepik Integrated Development Study (1982). Quin (1984) did not extend her study across the East Sepik provincial border.

Cash income is derived from the sale of cocoa, Robusta coffee, cattle and fresh food. A little rice was being grown and sold in 1991.

National Nutrition Survey 1982/83

76 families from 4 villages were asked in May 1983 what they had eaten the previous day. 61 per cent reported eating sago, 59 per cent banana, 49 per cent sweet potato, 45 per cent coconut, 29 per cent yam, 17 per cent taro, 1 per cent Chinese taro and none cassava. 8 per cent reported eating rice. None reported eating fresh fish. Consumption of both sago and sweet potato is higher than that expected from the crop pattern and the consumption of yam lower than expected.

Main References

West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

Other References

Haantjens, H.A., P.C. Heyligers, J.R. McAlpine, J.C. Saunders and R.H. Fagan 1972 Lands of the Aitape-Ambunti area, Papua New Guinea. Land Research Series No. 30, Commonwealth Scientific and Industrial Research Organization, Melbourne.
Quin, F.M. 1984 Farming systems of East Sepik Province, Papua New Guinea. Unpublished report, East Sepik Rural Development Project, Wewak.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 9	**Subsystem No.** 1 **of** 1
Districts 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 24
Population 789	**Population density** 33 **persons/sq km**	**Population absent** 9 **%**

System Summary

This system is restricted to the Bimin Valley, near Oksapmin. Tall woody regrowth, more than 20 years old, is cleared, heaped around the base of trees and burnt. Trees are killed but are left standing. Sweet potato and taro are the most important crops. Taro is more abundant above 1800 m altitude and sweet potato more abundant below that altitude. Taro and sweet potato are planted in separate gardens. Only one planting is made before fallowing. In sweet potato gardens more trees are removed than in taro gardens.

Extends across provincial border to System(s) None

Altitude range (m) 1600-2200 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	Sweet potato, Taro (Colocasia)
STAPLES SUBDOMINANT	None
STAPLES PRESENT	Banana, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Bean (common), Cabbage, Choko tips, Corn, Cucumber, Highland pitpit, Pumpkin tips
FRUITS	Banana, Sugarcane
NUTS	Karuka (planted), Karuka (wild)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Very significant
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Mineral oil	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	Minor
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In May 1992, visit to Bimin airstrip and vicinity (1 day); foot traverse from Bimin to Tekin Valley (1 day).

Boundary definition

The boundary with System 1503 was determined by a foot traverse from Bimin airstrip to Tekin and Oksapmin. The southern boundary with System 0102/1505 was based on interviews at Bimin and Selbang villages.

Notes

This system is similar to System 1503, but fallows are longer and the fallow vegetation here is tall woody regrowth compared with tall grass and woody regrowth in System 1503. However some sweet potato gardens are made in woody regrowth/cane grass fallows and some casuarinas are now planted in sweet potato gardens in this system. The system is distinguished from System 0102/1505 where sweet potato, taro, Chinese taro and cassava are important crops.

It is probable that most food is derived from sweet potato gardens, but taro gardens are of great ritual and historical importance. They are cultivated upslope from sweet potato gardens, which are located on the valley floors. In the early 1970s, Poole (1976, 211, 279) reported that men did all the work associated with growing taro, while, after clearing and fencing, women did all the work growing sweet potato. Women could not enter a taro garden and initiated men would not enter a sweet potato garden after it was fenced. Men claimed that while they could eat sweet potato they could not work without taro which made them strong. Poole reported that sweet potato gardens were cultivated between three and five times before fallowing, but this was not observed in 1992. Sweet potato has probably increased in importance relatively recently. The reasons villagers gave in 1992 for this trend were: (1) increasing population; (2) shorter fallows and hence lower taro yields; and (3) diseases of taro, including larval attacks on the corm and stem, taro beetle, a unidentified virus which kills the plant and Phyllosticta leaf spot. The main source of cash income is gifts from relatives working at Tabubil or Ok Tedi. Fresh food was sold from Bimin airstrip, but this had ceased by 1992. Bilums, tulip bark, bows, dogs and mineral oil are traded.

National Nutrition Survey 1982/83

No villages from this system were included in the survey.

Main References

Bayliss-Smith, T. 1985 Subsistence agriculture and nutrition in the Bimin Valley, Oksapmin Sub-district, Papua New Guinea. Singapore Journal of Tropical Geography 6, 2, 101-115.

Poole, F.J.P. 1976 The Ais Aim: an introduction to male initiation among the Bimin-Kuskusmin of the West Sepik District, Papua New Guinea. PhD thesis, Cornell University, Ithaca.

West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

Other References

Cape, N. 1981 Agriculture. In Weeks, S.G. (ed), Oksapmin: Development and Change. Port Moresby, University of Papua New Guinea, 149-190.

Hyndman, D. and G.E.B. Morren 1990 The human ecology of the Mountain-Ok of central New Guinea: a regional and inter-regional approach. In Craig, B. and D. Hyndman (eds), Children of Afek: Tradition and Change Among the Mountain-Ok of Central New Guinea. Monograph No. 40. Sydney, Oceania, 9-26.

Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

Poole, F.J.P. 1981 Transforming 'natural woman': female ritual leaders and gender ideology among Bimin-Kuskusman. In Ortner, S.B. and H. Whitehead (eds), Sexual Meanings: The Cultural Construction of Gender and Sexuality. Cambridge, Cambridge University Press, 116-165.

Poole, F.J.P. 1987 Ritual rank, the self, and ancestral power: liturgy and substance in a Papua New Guinea society. In Lindstrom, L. (ed), Drugs in Western Pacific Societies: Relations of Substance. ASAO Monograph No. 11. Lanham, University Press of America, 149-196.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 10	**Subsystem No.** 1 **of** 1
Districts 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 45
Population 3,125	**Population density** 69 **persons/sq km**	**Population absent** 10 **%**

System Summary

Located in the Tekin Valley near Oksapmin. Tall grass and short woody regrowth fallows, 10-15 years old, are cleared and burnt. Many trees are killed but left standing. Sweet potato is the most important crop; taro is an important crop; banana is also grown. These crops are planted in separate gardens; sweet potato on the lower slopes and valley floors and taro on the upper slopes. Sweet potato garden fallows commonly have casuarina trees in them, planted during the previous cultivation. Taro garden fallows are less likely to contain casuarina.

Extends across provincial border to System(s) None

Altitude range (m) 1700-2200 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	Sweet potato
STAPLES SUBDOMINANT	Taro (Colocasia)
STAPLES PRESENT	Banana, Sweet potato, Taro (Colocasia)
OTHER VEGETABLES	Aibika, Bean (common), Cabbage, Corn, Cucumber, Highland pitpit, Pumpkin tips, Spring onion
FRUITS	Sugarcane
NUTS	Karuka (planted), Karuka (wild)
NARCOTICS	Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Grass/woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	5-15 years
CROPPING PERIOD	1 planting
R VALUE	9 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	Very significant
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	Significant
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	Minor
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Fresh food	Significant
2 Potato	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	Minor
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Minor
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	Minor
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Significant
STAKING OF CROPS	Minor
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	None
SEASONAL SEC'DARY CROPS	None

OTHER DOCUMENTATION

Survey description

In November 1979, a foot traverse from Tekin Valley to the Bak Valley and to Oksapmin Station (4 days). In May 1992, a foot traverse from Bimin airstrip to Bak Valley, Tekin and Oksapmin (3 days).

Boundary definition

The boundaries with System 1503 were determined by foot traverses from Tekin mission to the Bak Valley and Oksapmin station; and from Bimin airstrip to Tekin and Oksapmin.

Notes

This system is distinguished from System 1503 where planted casuarina fallows are not common.

Sweet potato has become the most important crop relatively recently. People said in 1992 that this had occurred because (1) soil fertility had declined and would no longer support taro; and (2) diseases and pests of taro (including taro beetle, larvae, an unidentified virus, corm rot) had reduced yield. Serious famines resulting in many deaths are reported to have occurred in the 1930s and around 1940 (Perey 1973, 29-30). In 1992 villagers said that a major food shortage occurred in about 1920-22. Casuarinas have been present for an indeterminate length of time, but the planting of casuarina in fallows has been a practice only for 40-50 years, and has increased in importance during the last 25 years. Perey (1973, 37, 282-283) reports a tendency to plant taro during the wetter period of the year and sweet potato during drier months. In sweet potato gardens almost all trees are felled. In taro gardens, trees are progressively pollarded and killed by fire to provide increased exposure to sunlight as the crop matures. Cape (1981, 154) noted that by 1980, at Divanap village in the Upper Tekin Valley, some sweet potato was planted in mounds and there was some second planting before fallow in response to land pressure. In a small area (less than 5 per cent of the total area cultivated) on river flats which flood intermittently, sweet potato is planted in large mounds (1 to 2 m in diameter and 50 to 80 cm high). These mounds are planted up to six times before fallowing, with short grass fallows between crops. Fallow vegetation is tall cane grass (Phragmites) and casuarina.

A significant amount of fresh food is sold to the Tabubil Wholesale Vegetable Market (3 tonnes per week in 1992), mostly produced from the Tekin area. The main source of cash remains gifts from people working near Tabubil (the Ok Tedi mine town).

National Nutrition Survey 1982/83

53 families from 2 villages were asked in May 1983 what they had eaten the previous day. 100 per cent reported eating sweet potato and none banana, coconut, sago, taro, Chinese taro, yam or cassava. 19 per cent reported eating rice. None reported eating fresh fish. This is similar to the crop pattern except for the lower than expected consumption of taro.

Main References

Cape, N. 1981 Agriculture. In Weeks, S.G. (ed), Oksapmin: Development and Change. Port Moresby, University of Papua New Guinea, 149-190.
Perey, A. 1973 Oksapmin society and world view. PhD thesis, Columbia University, New York.
West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

Other References

Bourke, R.M. 1979 Report on a brief visit to Oksapmin sub-district to examine subsistence agriculture. Unpublished report, Highlands Agricultural Experiment Station, Aiyura.
Hyndman, D. and G.E.B. Morren 1990 The human ecology of the Mountain-Ok of central New Guinea: a regional and inter-regional approach. In Craig, B. and D. Hyndman (eds), Children of Afek: Tradition and Change Among the Mountain-Ok of Central New Guinea. Monograph No. 40. Sydney, Oceania, 9-26.
Morren, G.E.B. and D.C. Hyndman 1987 The taro monoculture of central New Guinea. Human Ecology 15, 3, 301-315.

PROVINCE 15 West Sepik	**AGRICULTURAL SYSTEM No.** 11	**Subsystem No.** 1 **of** 1
Districts 1 Aitape, 2 Vanimo, 3 Amanab, 4 Telefomin	**Subsystem Extent** 100 %	**Area (sq km)** 2064
Population 17,536	**Population density** 8 **persons/sq km**	**Population absent** 9 **%**

System Summary

Located in the Bewani and Border Mountains and along the north coast. The primary source of food everywhere is sago, some of which is planted and some of which is managed, naturally occuring stands. Gardens are cleared in fallows of tall woody regrowth, 15-30 years old. Fallow vegetation is cut, dried and burnt. Only one planting is made before fallowing. Banana and taro are important crops; other crops are yam (D. alata), sweet potato and Chinese taro. Game and fish are important sources of food. Food gardens are planted at the end of the drier season.

Extends across provincial border to System(s) None

Altitude range (m) 0-800 **Slope** Multiple classes

CROPS

STAPLES DOMINANT	Sago
STAPLES SUBDOMINANT	Banana, Taro (Colocasia)
STAPLES PRESENT	Banana, Chinese taro, Sago, Sweet potato, Taro (Colocasia), Yam (D. alata)
OTHER VEGETABLES	Aibika, Amaranthus spp., Corn, Ferns, Highland pitpit, Kumu musong, Lowland pitpit, Tulip
FRUITS	Marita pandanus, Pawpaw, Sugarcane, Ton
NUTS	Breadfruit, Coconut, Galip
NARCOTICS	Betel nut (lowland), Betel pepper (lowland), Tobacco

FALLOW & CROPPING PERIOD

FALLOW TYPE	Tall woody regrowth
SHORT FALLOW	None
LONG FALLOW PERIOD	>15 years
CROPPING PERIOD	1 planting
R VALUE	5 (very low)

GARDEN SEGREGATION

GARDEN SEGREGATION	None
CROP SEGREGATION	Minor
CROP SEQUENCES	None
MIXED VEGETABLE GARDENS	None
HOUSEHOLD GARDENS	Minor

SOIL FERTILITY MAINTENANCE

LEGUME ROTATION	None
PLANTED TREE FALLOW	None
COMPOST	None
ANIMAL MANURE	None
ISLAND BED	None
SILT FROM FLOOD	None
INORGANIC FERTILISER	None

CASH EARNING ACTIVITIES

1 Betel nut	Minor
2 Fresh food	Minor
3 Rubber	Minor

OTHER AGRONOMIC PRACTICES

Water Management:	
DRAINAGE	None
IRRIGATION	None
Soil Management:	
PIGS PLACED IN GARDENS	None
BURN FALLOW VEGETATION	Very significant
TILLAGE	None
MECHANIZATION	None
DEEP HOLING	None
MULCHING	None
SOIL RETENTION BARRIERS	None
Mounding Techniques:	
VERY SMALL MOUNDS	None
SMALL MOUNDS	None
MOUNDS	None
LARGE MOUNDS	None
Garden Bed Techniques:	
BEDS SQUARE	None
BEDS LONG	None
Other Features:	
FENCES	Minor
STAKING OF CROPS	None
FALLOW CUT ONTO CROPS	None
SEASONAL MAIN CROPS	Significant
SEASONAL SEC'DARY CROPS	Significant

OTHER DOCUMENTATION

Survey description

In May 1982, visits to Bewani (1 day) and Amanab (3 days). In July 1991, visits to Vanimo and Bewani (2 days).

Boundary definition

The southern boundary with System 1501/0101 was based on interviews and fieldwork in the Yapsei area. The boundary with System 1506 was determined by a road traverse from Vanimo to Bewani station. The boundary with System 1504/1417 was based on field visits in the Edwaki area; from Kelm and Kelm (1980), Townsend (1969) and Guddemi (1992); and map interpretation of areas of low gradient, poorly drained topography. The boundary with System 1507 was based on a road traverse between Dreikikir, Nuku and Lumi.

Notes

This system is distinguished from System 1501/0101 where agriculture is important and taro is the most important crop; from System 1506 where sago, banana, sweet potato and taro are important foods; and from System 1504 where sago is the most important food, but agriculture is not an important source of food. The system is very similar to System 1506/1402 but is distinguished on the basis of minor differences in the importance of crops.

The distinguishing feature of this system is the importance of sago as a source of food and the mixture of supplementary agricultural crops. The significance of the agricultural crops varies locally in terms of the size of gardens, the care taken in cultivation and the importance of individual crops. Overall, banana is the most common of the important garden crops, but in some locations taro is more important, for example, in the Imonda area. Tulip is everywhere the most common green vegetable. Breadfruit trees are very common with the seed only eaten. A number of authors indicate that food gardens are planted seasonally: West Sepik Integrated Development Study (1982, 60, 85) October to December; Juillerat (1983, 5) after July; Huber (1978, 161) September to November; Gois (1979, 18) August to October.

Game is an important food source, particularly wild pig, cassowari, wallaby and fish. Tall woody regrowth is the main type of fallow vegetation but some gardens follow previously unused forest as people move to the new roads linking Vanimo and Bewani and along forestry roads.

Sweet potato and taro tend to be grown in separate sections of gardens, but they may be interplanted. Some people make household gardens. Those west of Amanab contain tulip, winged bean, aibika and snake bean. Refugees from the Baliem Valley of Irian Jaya living in the Bewani area make large sweet potato gardens. Gardens are fenced in the Imonda area, but fences are less common elsewhere. Yam (D. esculenta) is grown on tall stakes. Sweet potato and yam are planted without mounding.

A little cash income is derived from the sale of fresh food in Vanimo, Amanab and other markets. Minor quantities of betel nut are sold in all urban locations. Rubber is grown in the Amanab area and sold at Green River. Some cocoa is grown and sold inland from Vanimo and some crocodiles are sold from this area. In the Ossima area only, people were receiving substantial cash incomes from the sale of pigs, chickens and some cattle in 1991. Households were receiving incomes of up to K1000 per year.

This system occurs in Census Divisions 23 and 24.

National Nutrition Survey 1982/83

209 families from 18 villages were asked in March, April, May or June 1983 what they had eaten the previous day. 84 per cent reported eating sago, 39 per cent banana, 27 per cent coconut, 20 per cent sweet potato, 5 per cent taro, 4 per cent yam and none cassava or Chinese taro. 11 per cent reported eating rice. 14 per cent reported eating fresh fish.

Main References

Huber, P. 1981 Reflections on anthropology and rural development: an example from West Sepik. In Gordon, R. (ed), The plight of peripheral people in Papua New Guinea. Volume 1: The inland situation. Cambridge, MA, Cultural Survival, 80-93.

Juillerat, B. 1983 L'essartage chez les Yafar (Nouvelle-Guinée). Journal d'Agriculture Traditionelle et de Botanique Appliquée 30, 1, 3-33.

Other References

Gell, A. 1975 Metamorphosis of the Cassowaries: Umeda Society, Language and Ritual. London, The Athlone Press.
Gois, A. 1979 Wamu Village, Amanab District, West Sepik Province. Student Research Paper No. 3, University of Papua New Guinea, Port Moresby.
Huber, P.H. 1978 Organizing production and producing organization: the sociology of traditional agriculture Development Studies Centre. In Fisk, E.K. (ed), The Adaptation of Traditional Agriculture. Monograph No. 11. Canberra, Australian National University, 158-179.
Juillerat, B. 1982 Note sur les rapports de production dans l'horticulture-arboriculture Yafar (Nouvelle-Guinée). Journal d'Agriculture Traditionelle et de Botanique Appliquée 29, 3-4, 285-293.
Juillerat, B. 1984a Culture et exploitation du palmier-sagoutier dans les Border Mountains (Nouvelle Guinée). Techniques et Culture 3, 43-64.
Juillerat, B. 1984bD'Acorus à Zingiber: taxinomie et usage des plantes cultivées chez les Yafar de Nouvelle-Guinée. Journal d'Agriculture Traditionelle et de Botanique Appliquée 31, 1-2, 3-31.
Juillerat, B. 1986 Les Enfant du Sang: Societe, Reproduction et Imaginaire en Nouvelle-Guinee (editions de la Maison des Sciences de L'Homme). Paris.
McSween, S. 1989 Traditional and Cash Crop Agriculture in Four Areas of Sandaun Province: A Compiled Profile and Analysis. Vanimo, Monitoring and Evaluation Unit, West Sepik Province Development Project.
West Sepik Integrated Development Study 1982 West Sepik Development: background and recommendations. West Sepik Integrated Development Study, Vanimo.

4. AGRICULTURAL SYSTEMS: MAPS

The maps show the location of the Agricultural Systems identified in the Province and selected important characteristics of the systems. Where subsystems exist within an Agricultural System, the maps display information from the first subsystem only. Subsequent subsystem information is not displayed, but it is available in the text summaries. For crop combinations, cash income activities, population density and population absent, the maps show information for the entire system. A note in the key on the Agricultural Systems map lists the systems in which subsystems occur. Maps can be produced from computer files at any scale down to 1:500 000.

The following notes explain the classes used on the maps.

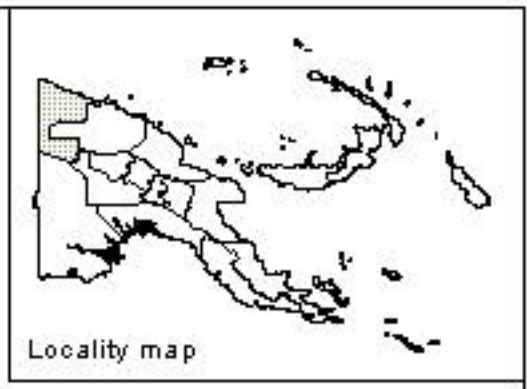
Map title	Notes
1. Agricultural Systems	Boundaries and identification numbers (eg. 1 = System 1401). See key for subsystem occurrences.
2. Fallow vegetation	The vegetation cleared from garden sites at the beginning of a new period of cultivation (8 classes).
3. Long fallow period	An estimate of the length of time land is left fallow before it is cultivated again (4 classes).
4. Number of plantings before fallow	The number of times staple crops are planted in the main gardens before those gardens are returned to a long fallow (5 classes).
5. Intensity of land use	Ratio of the cropping period (estimated from the number of plantings) to the length of the complete cultivation cycle, ie. cropping period plus fallow period (4 classes based on Ruthenberg's R factor)[1]. Very low: (R < 10) Low: (R = 10 - 32) Medium: (R = 33 - 66) High: (R > 66)
6. Crop combinations	Combinations of the most important (dominant staple) and important (subdominant staple) crops in this Province.

[1] R = (Number of years of cultivation x 100) / (Number of years of cultivation + Number of years of long fallow), (Ruthenberg 1980, 15)

Map title	Notes
7. Garden and crop segregation	Separation of crops into different gardens or into different plots within a garden (4 classes). A combination of Fields 28 and 29. For both fields, 'nil' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present'. Classes are: both absent = 'No segregation'; garden segregation present only = 'Garden segregation'; crop segregation present only = 'Crop segregation'; both present = 'Garden and crop segregation'.
8. Soil fertility maintenance	The presence or absence of the following: legume rotation, planted tree fallow, composting and mulching. For all features, 'nil' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present'.
9. Soil tillage	The use of tillage in the preparation of land for cultivation (4 classes).
10. Fallow clearing practices	A combination of the practices of burning fallow vegetation before planting, and cutting down fallows onto crops after planting. For both features, 'none' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present' (3 classes).
11. Soil mounds and beds	A combination of measures of significance for mounds and beds: Medium and large mounds are classed together as 'large mounds'. Square and long beds are classed together as 'beds'. Very small mounds are excluded. Absent = 'none' and 'minor or insignificant' for all mounds and beds. Present = 'significant' and 'very significant' for all mounds and beds (6 classes).
12. Water management techniques	The presence or absence of the following: drainage, irrigation and soil retention barriers. For all features, 'nil' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present' (4 classes).

Map title	Notes
13. Cash income activities	Combinations of cash earning activities specific to this province. For all activities, 'nil' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present'.
14. Seasonality of the main food crops	Whether the dominant staple (most important) crops and the subdominant staple (important) are planted at about the same time each year. 'Nil' and 'minor or insignificant' are defined as 'absent'; and 'significant' and 'very significant' as 'present' (2 classes).
15. Population density	Persons per square kilometre, based on the 1980 National Population Census and the area occupied by the System (6 classes). 'Not applicable' refers to Systems where there are no census points.
16. Population absent	The proportion of the 'total' population listed in the 1979 Provincial Data System Rural Community Register as being 'absent 6 months or more' from the Census Unit (5 classes). 'Not applicable' refers to Systems where either there are no census points, or where the PDS data do not distinguish between the 'total' and 'resident' populations.

WEST SEPIK PROVINCE
Agricultural systems



No agriculture
Agricultural system identified by number

Subsystems are present in System 3

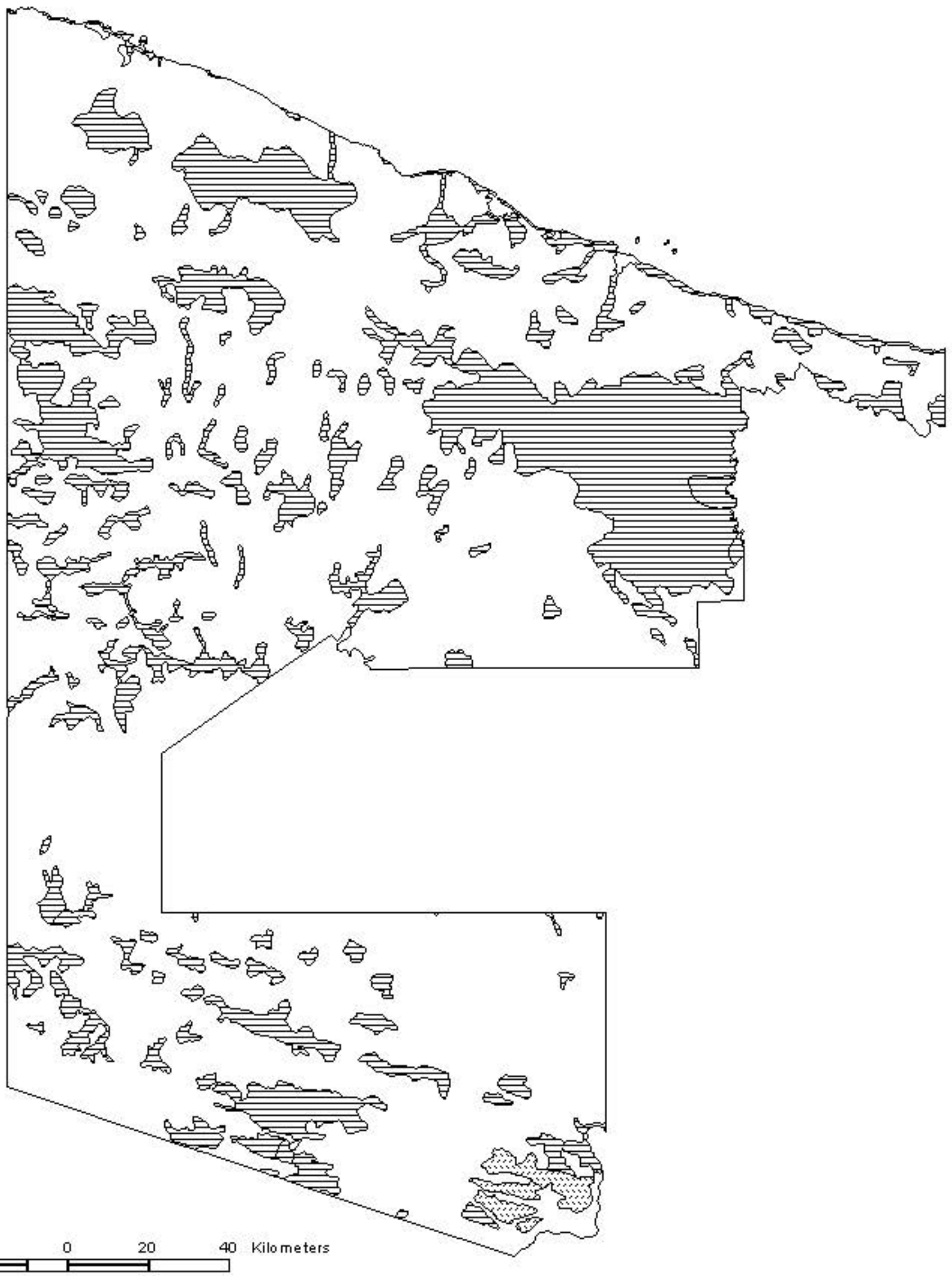
20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Fallow vegetation

Grass and woody regrowth
Tall woody regrowth

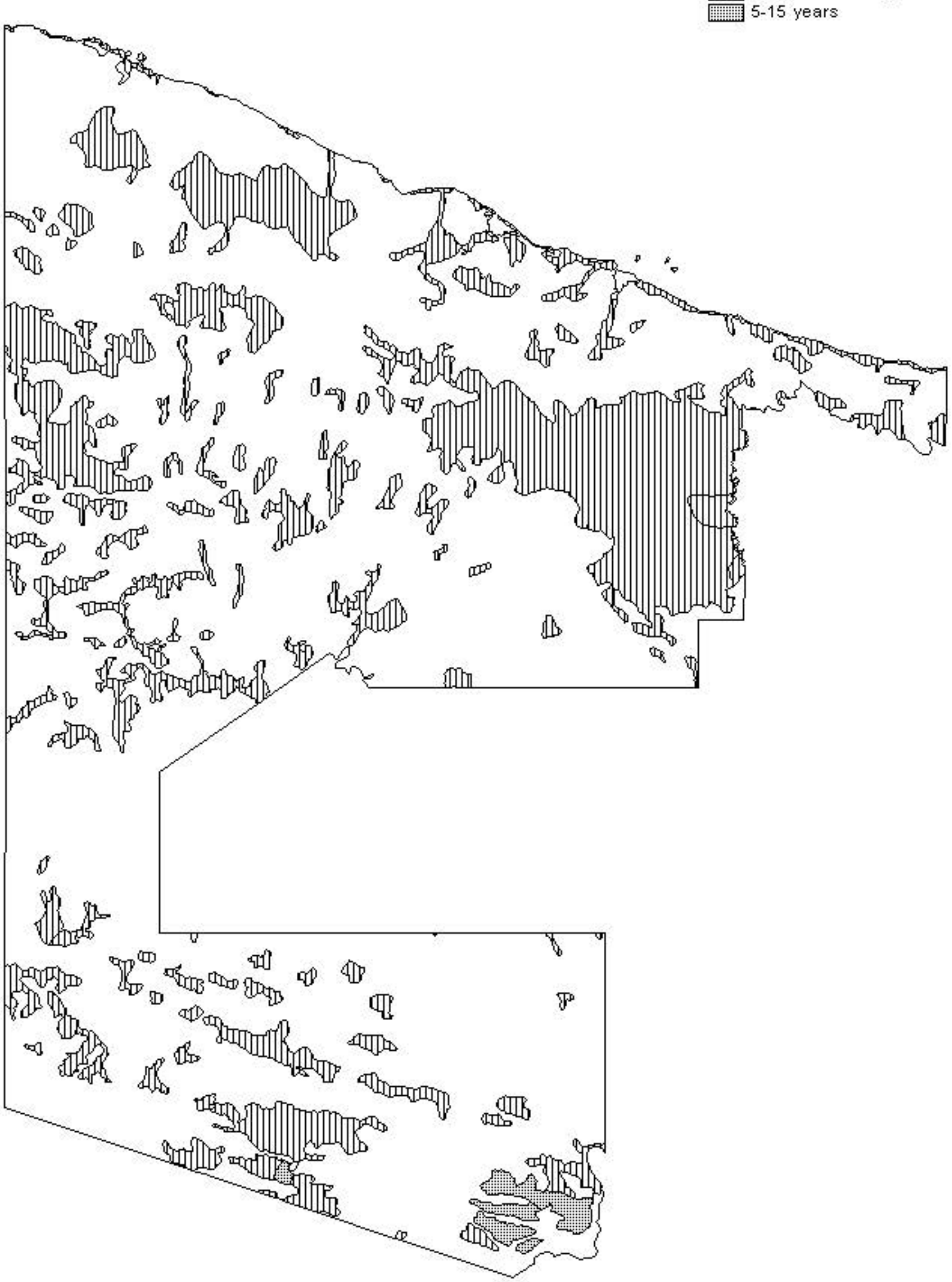


Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Long fallow period

Greater than 15 years
5-15 years



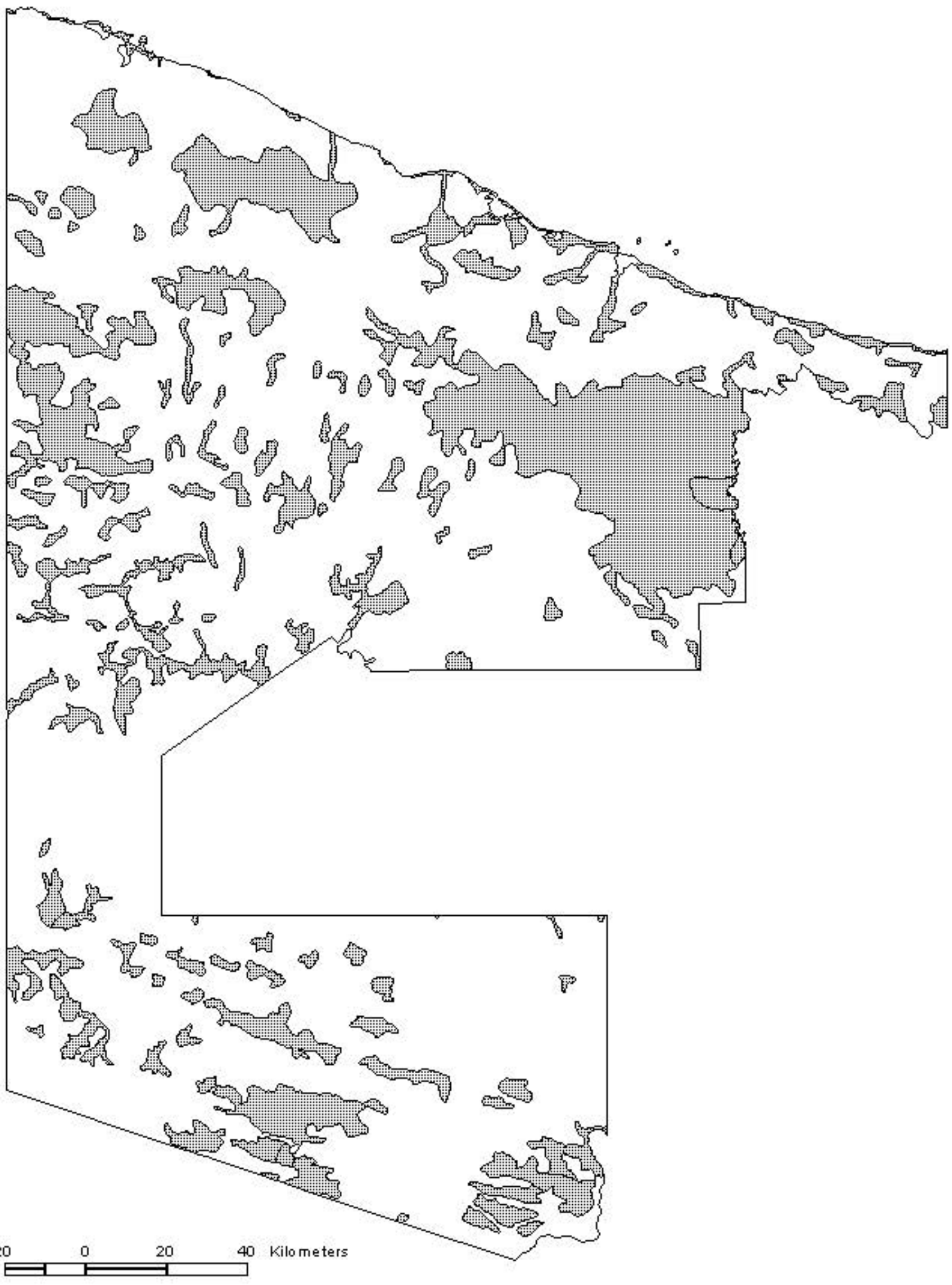
20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Number of plantings before fallow

1 planting only



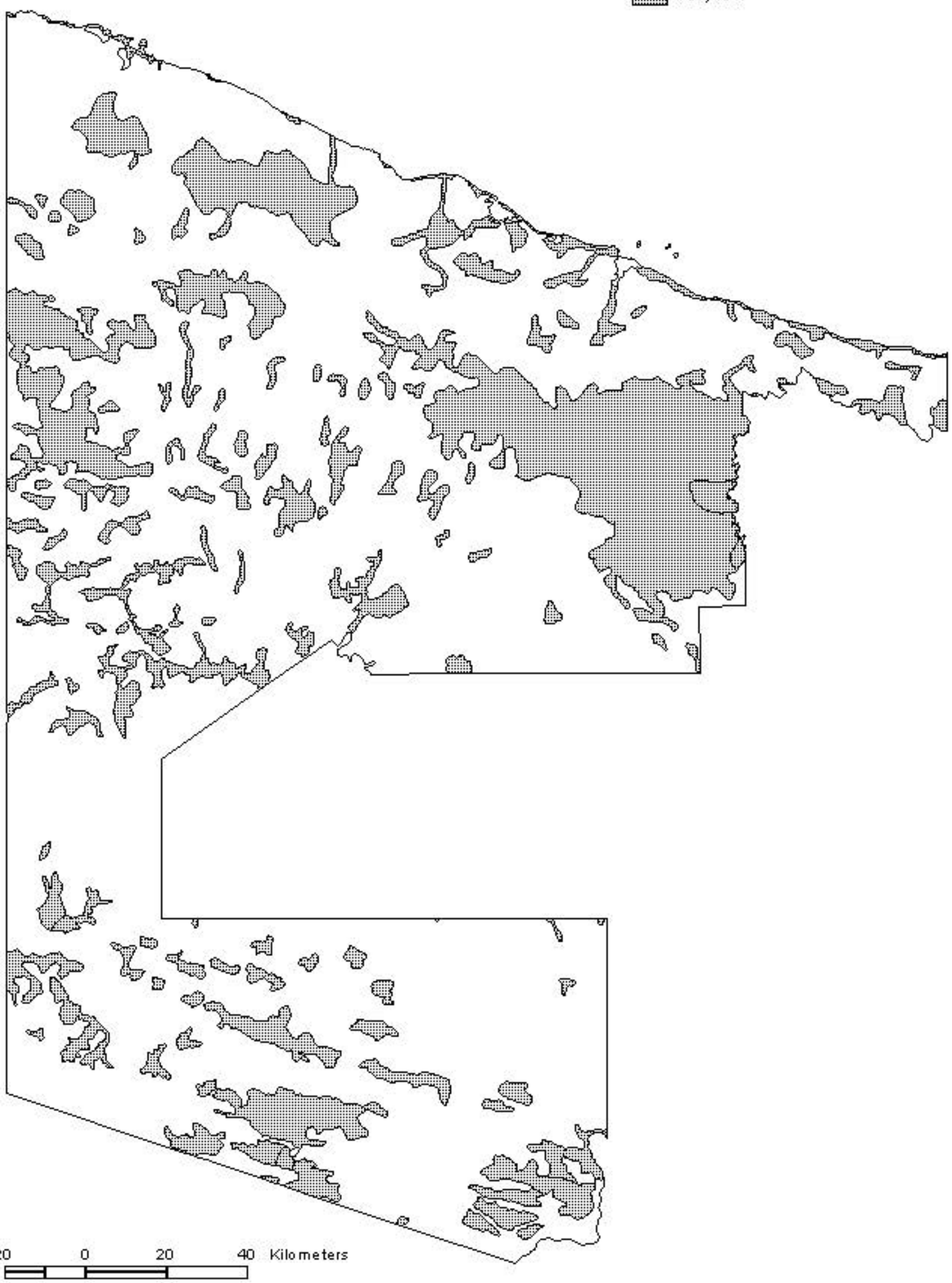
Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Intensity of land use

Ratio of cropping period to fallow period

Very low



Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

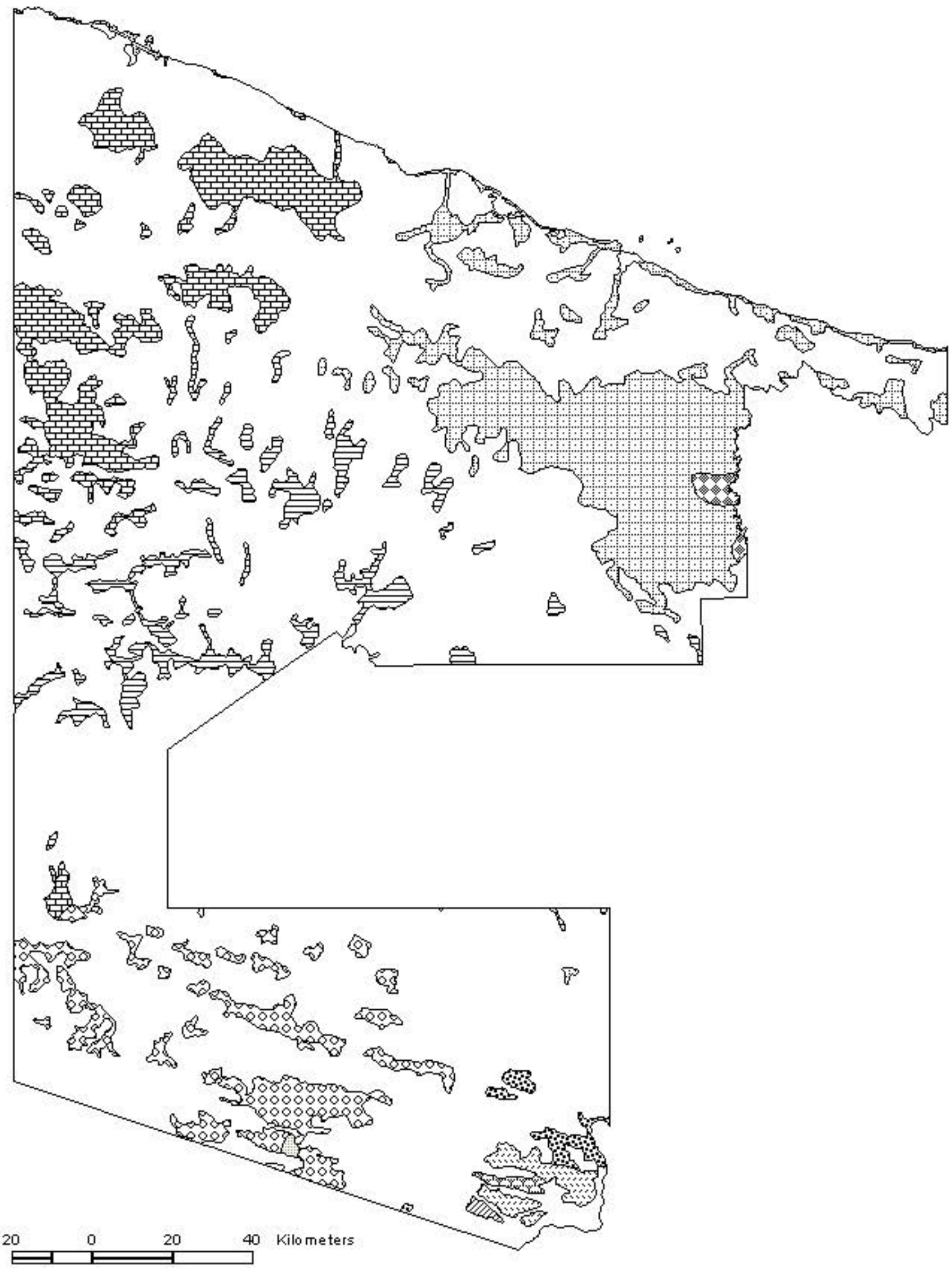
WEST SEPIK PROVINCE
Crop Combinations

	Most important crops	Important crops
	None	Banana/Coconut/Sago/Sweet potato/Taro
	None	Cassava/Chinese taro/Sweet potato/Taro
	Sago	Banana/Taro
	Sago	Banana/Chinese Taro/Coconut/Taro
	Sago	None
	Sweet potato	None
	Sweet potato	Taro
	Sweet potato/Taro	None
	Sweet potato/Taro	Chinese taro
	Taro	Chinese taro/Sweet potato
	Yam (D. esculenta)	Banana/Coconut/Sago/Taro/Yam (D. alata)

WEST SEPIK PROVINCE

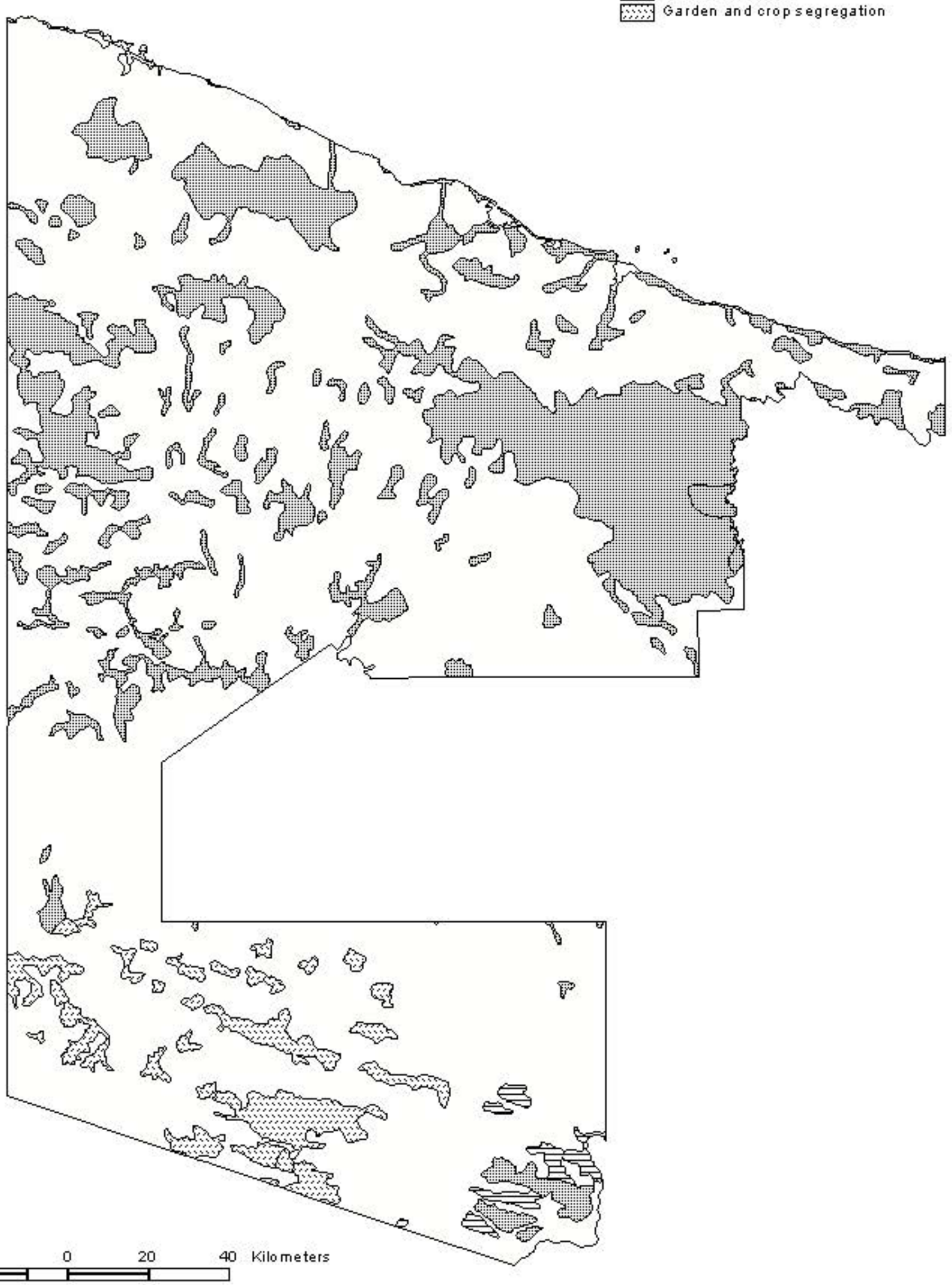
Crop combinations

Legend on facing page



Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

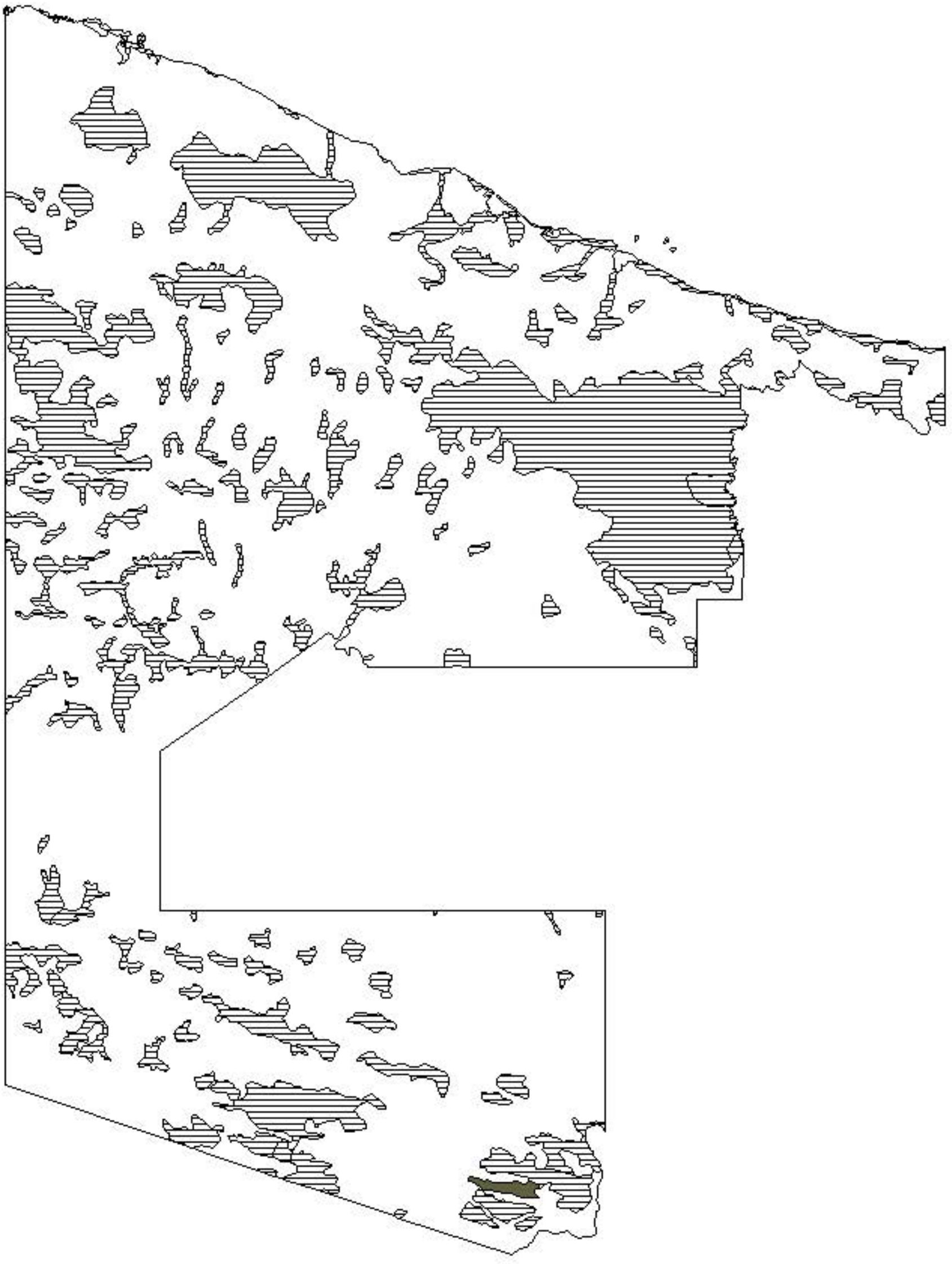


Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Soil fertility maintenance

No technique
Planted tree fallow



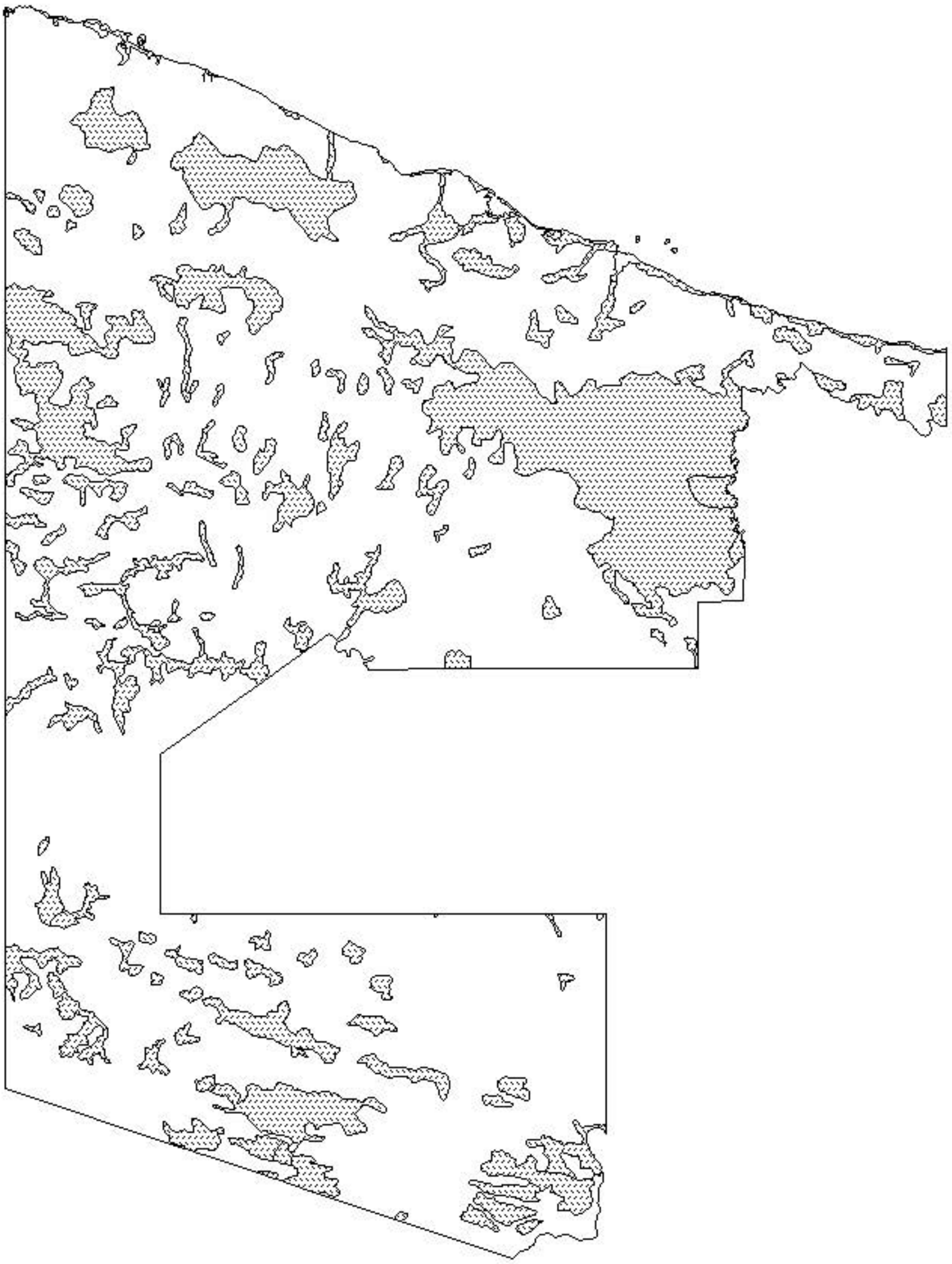
20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Soil tillage

None



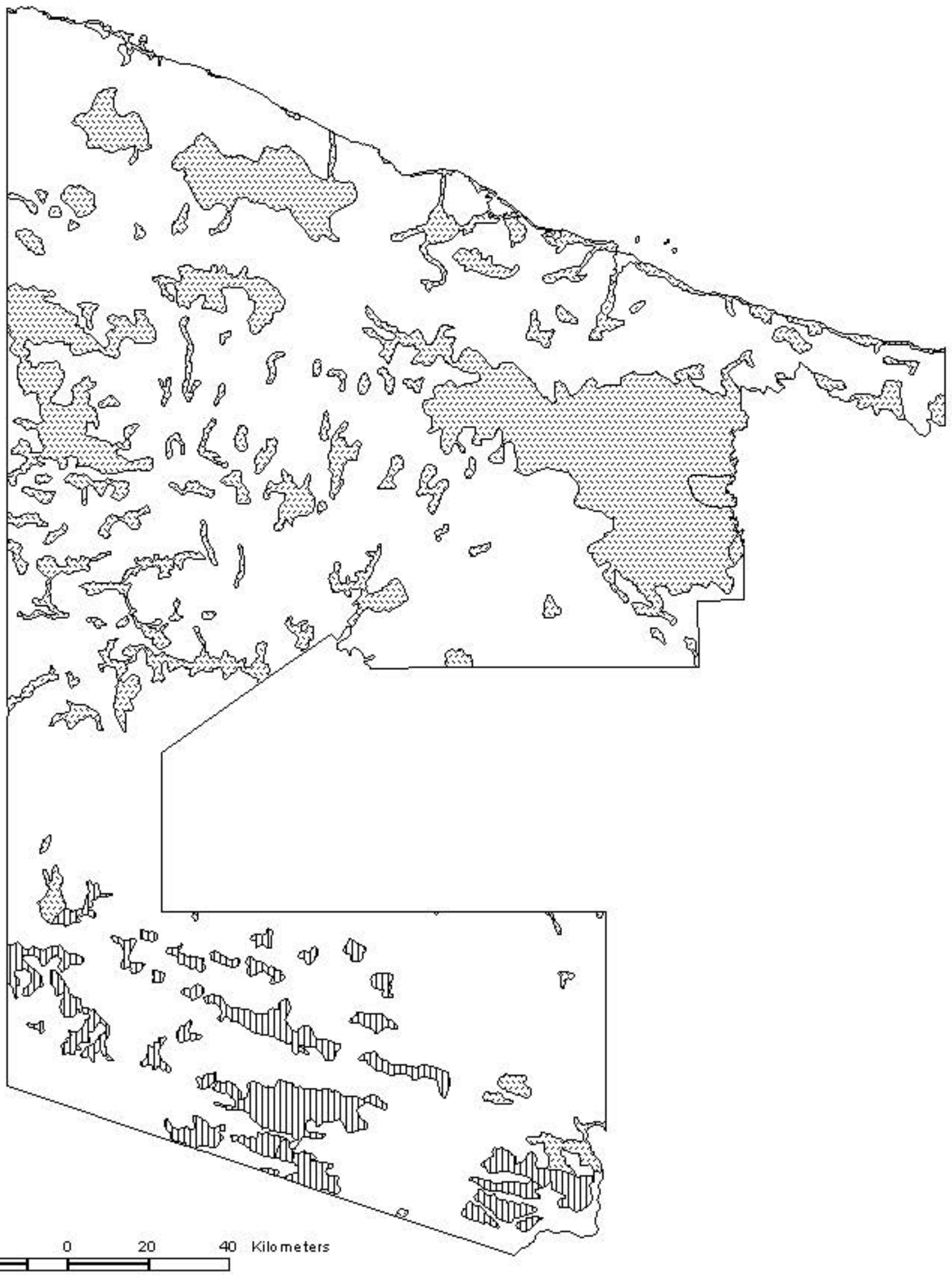
20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Fallow clearing practices

Fallow cut and not burnt
Fallow cut and burnt

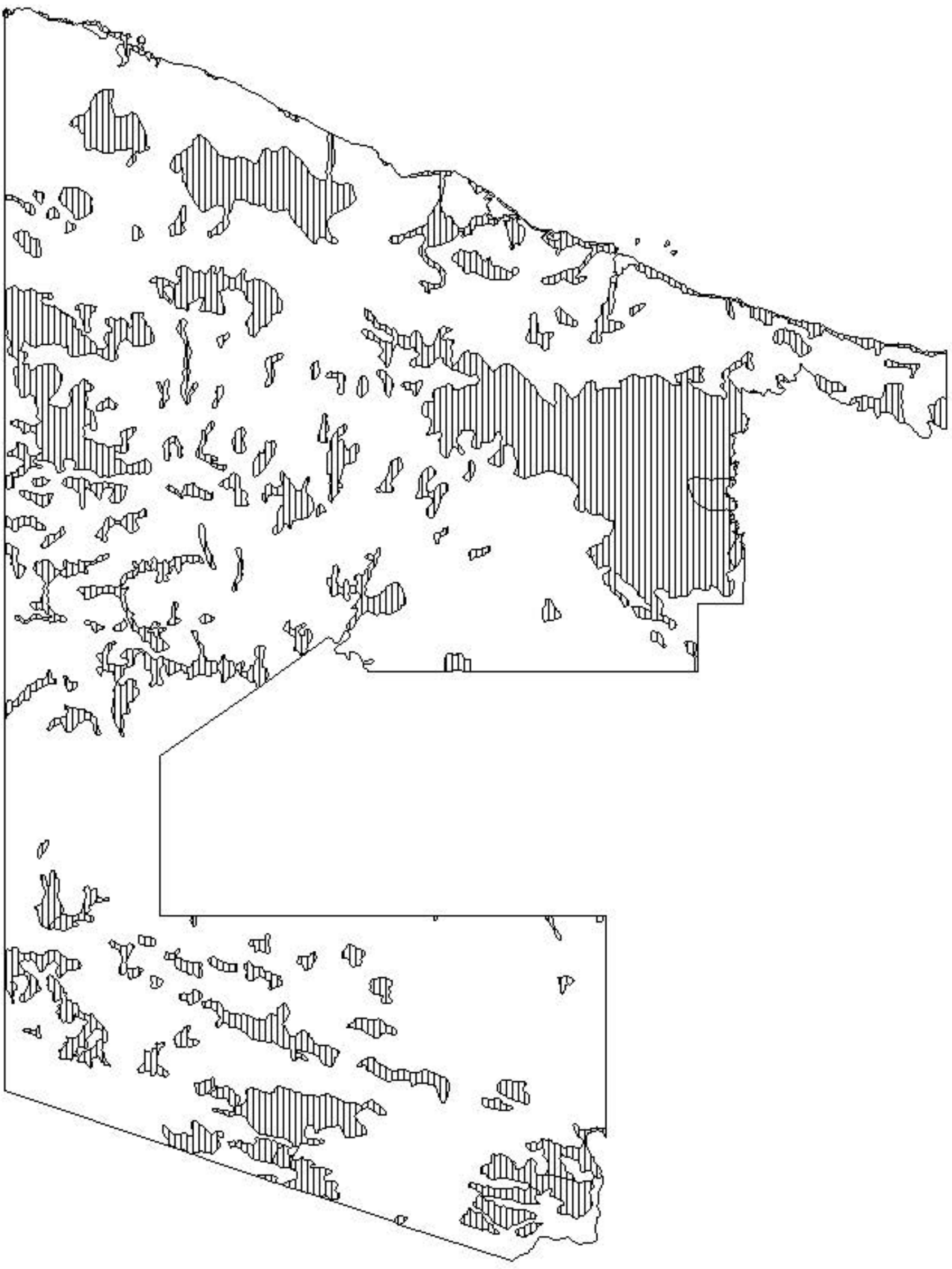


Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Soil mounds and beds

Mounds and beds absent



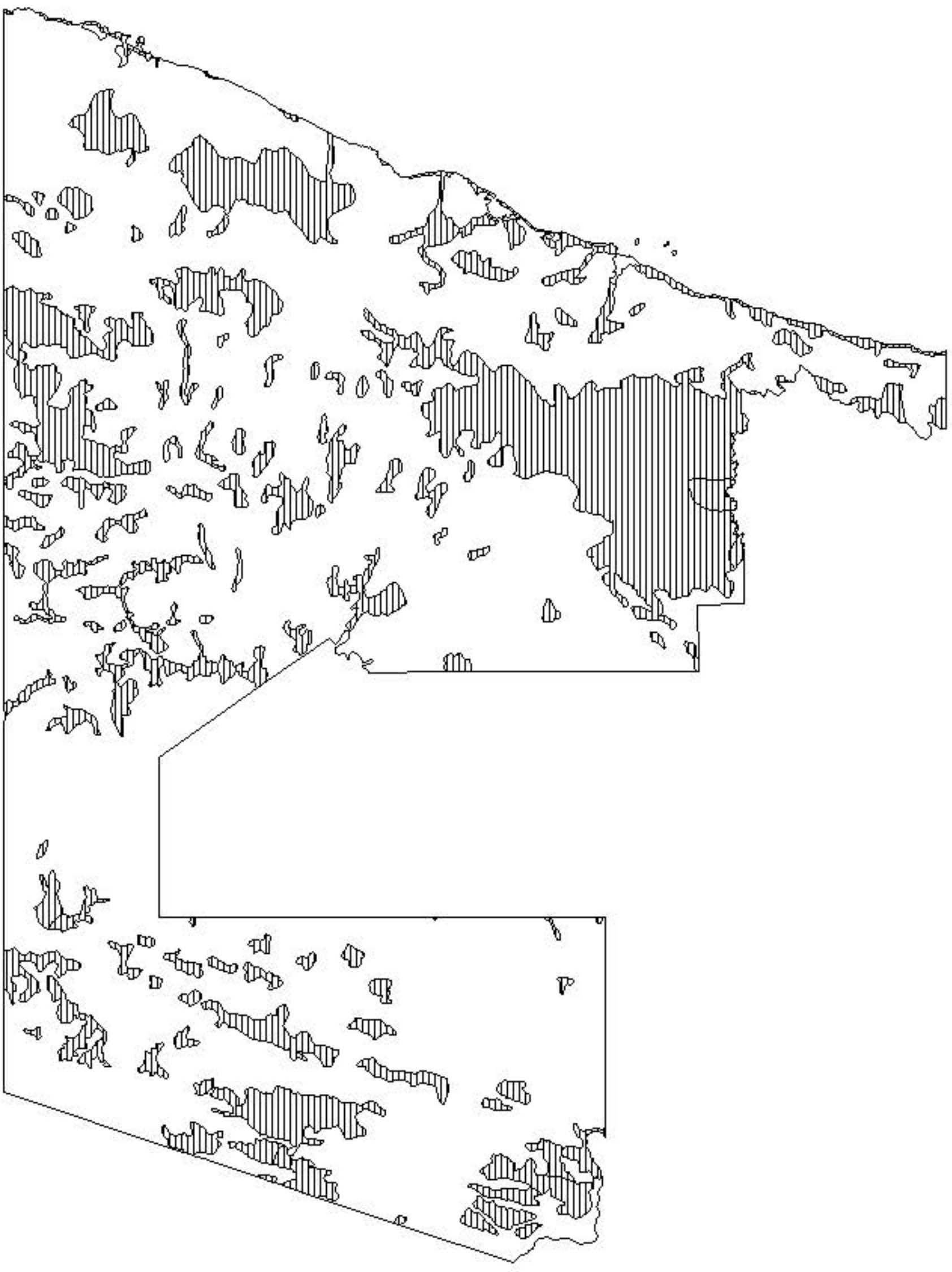
20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Water management techniques

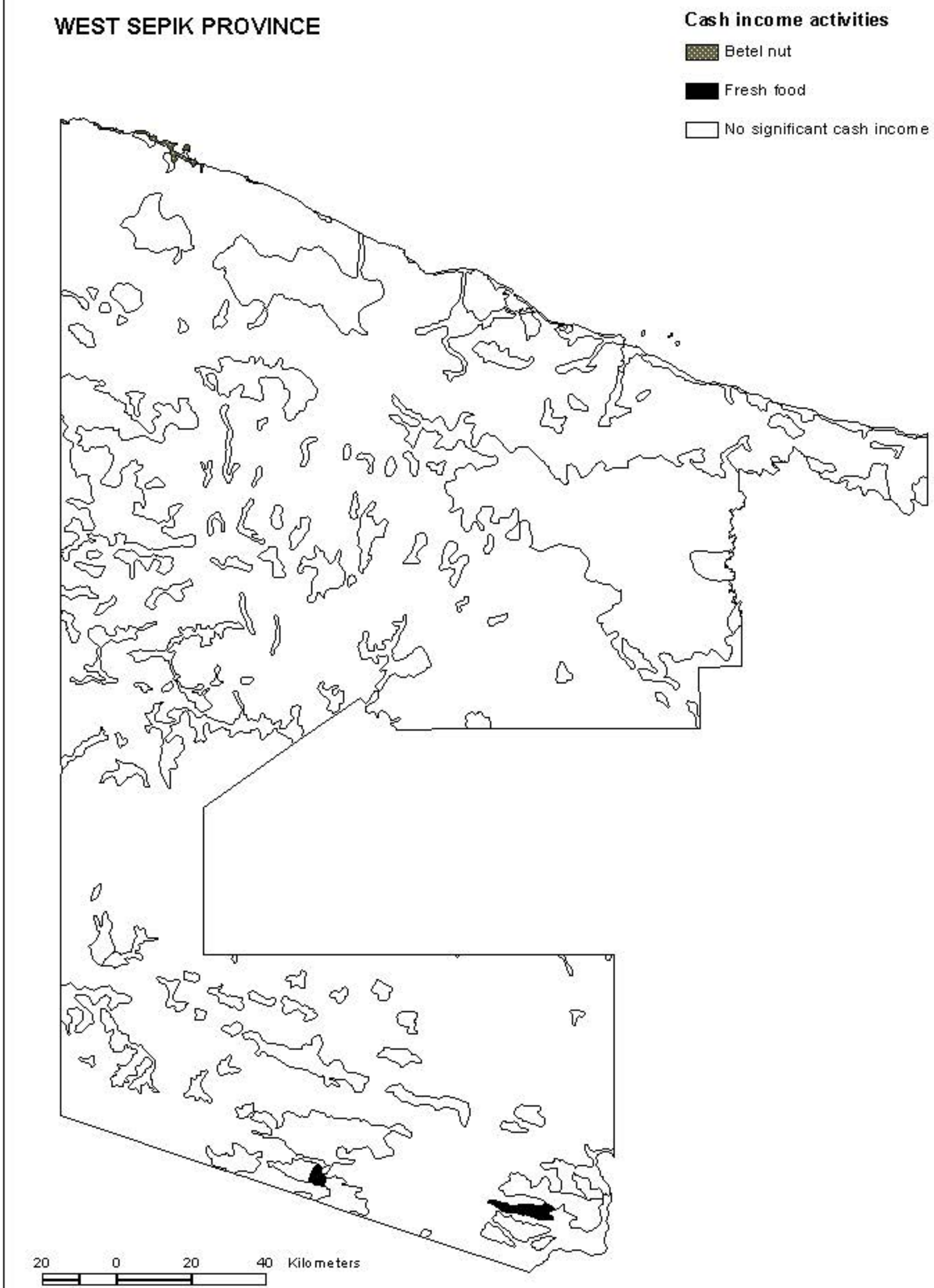
No water control



20 0 20 40 Kilometers

Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

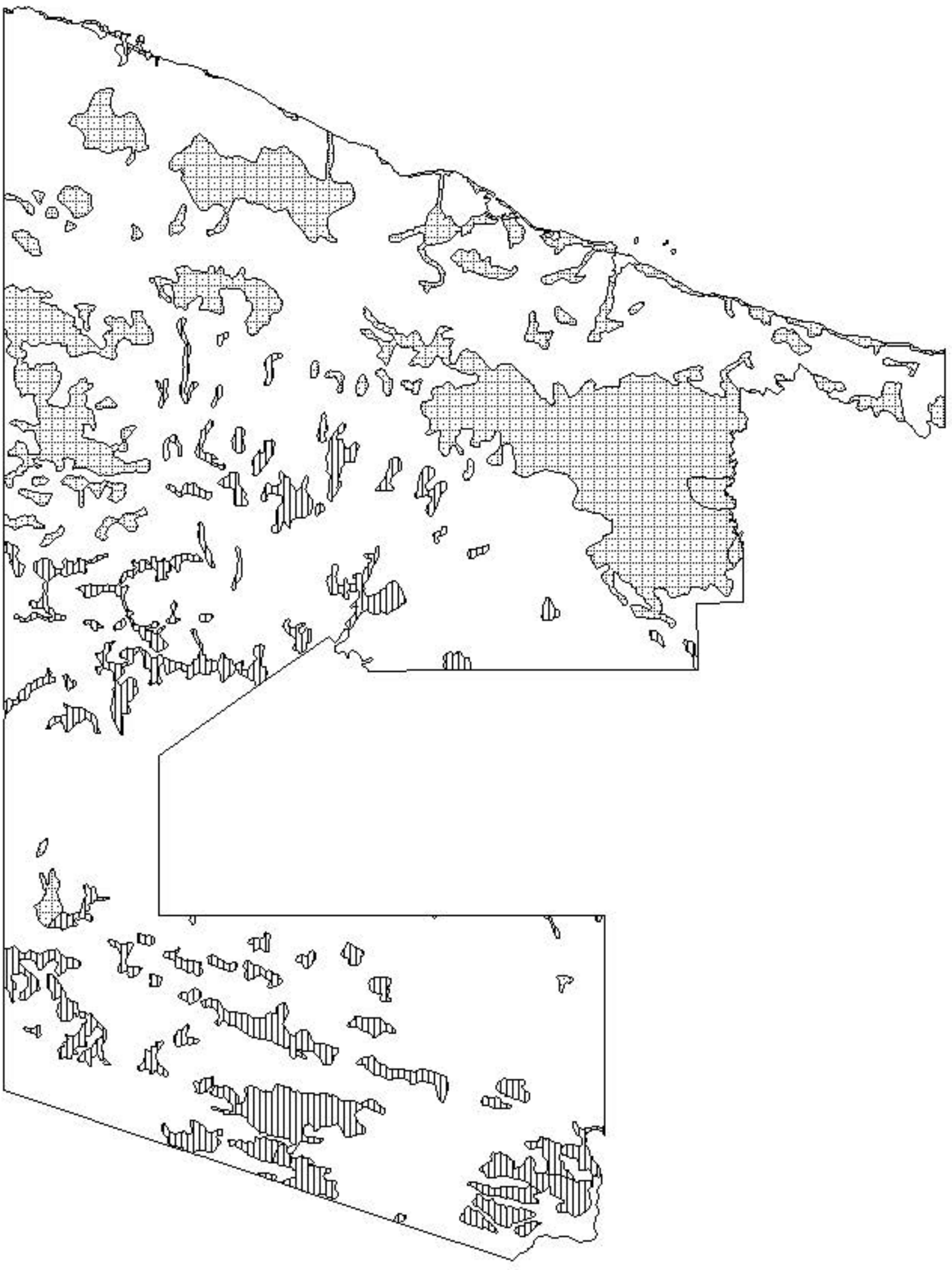


Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE

Seasonality of main crops

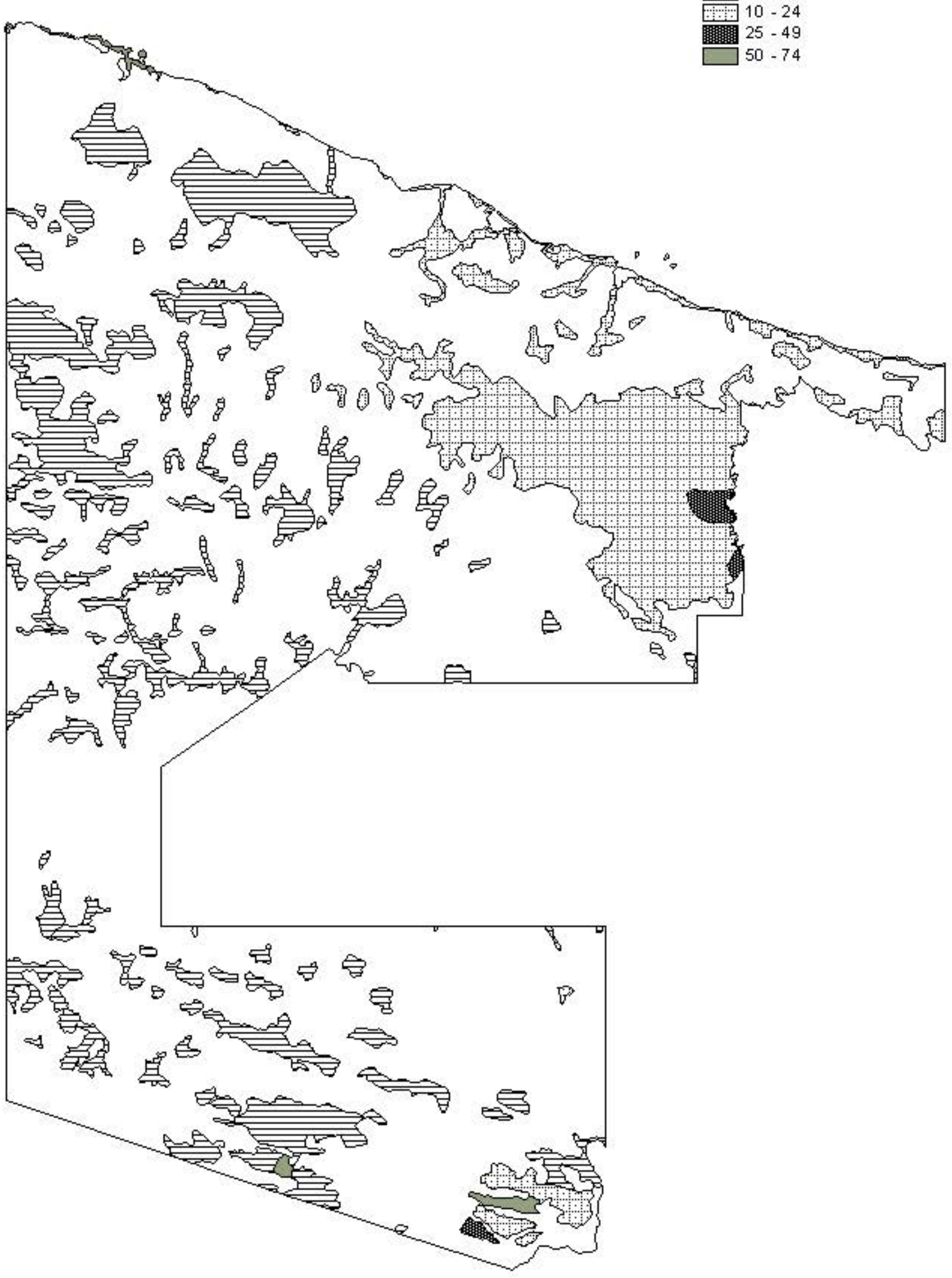
No seasonal planting
Planted seasonally



20 0 20 40 Kilometers

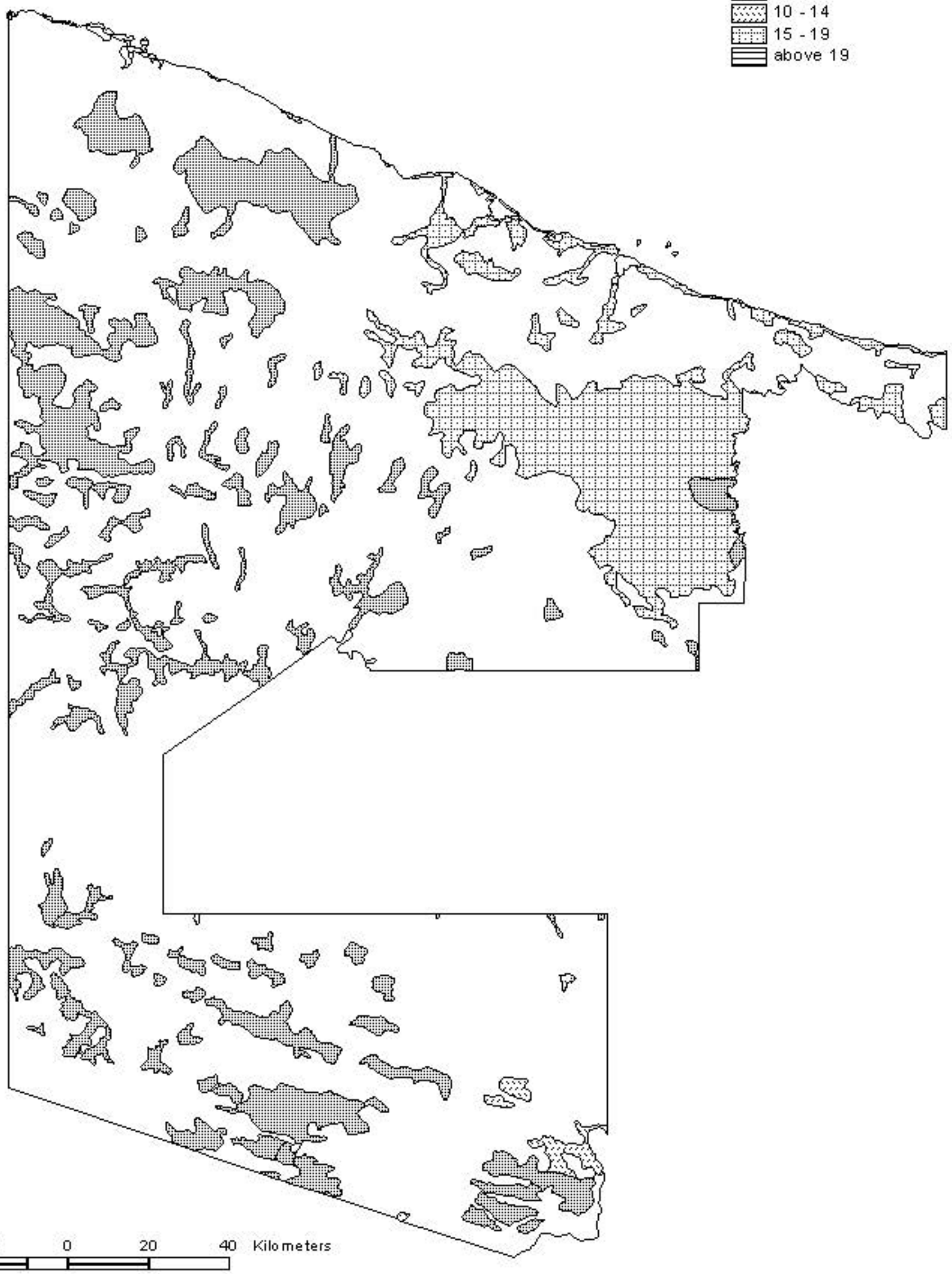
Mapping Agricultural Systems Project, Human Geography, ANU; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE



Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

WEST SEPIK PROVINCE



Mapping Agricultural Systems Project, Human Geography, ANU ; PNG DAL; Geography, UPNG, 1999

5. AGRICULTURAL SYSTEMS: DATA LISTING BY CODES

The following tables list all of the information contained within the database in coded form. The codes are contained in Section 2, Database Structure, Definitions and Codes.

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	No. of subsys	Subsys extent	Same sys oth prov	Districts	Census Divisions
1501	1	1	4	0101	4	24-25-26-27-28
1502	1	1	4		4	27
1503	1	2	3		4	29-30-31
1503	2	2	1		4	29-30-31
1504	1	1	4	1417	3-5-6	15-16-17-18-19-20-21-22-23-36-37-45
1505	1	1	4	0102	4	31
1506	1	1	4		2	05-06
1507	1	1	4	1402	1-3-5-6	01-02-03-04-15-33-34-35-36-38-39-40
1508	1	1	4		6	43-44
1509	1	1	4		4	30
1510	1	1	4		4	29
1511	1	1	4		1-2-3-4	04-06-07-08-09-10-11-12-13-14-16-17

KEY

Subsys	Subsystem
Same sys oth prov	Same system in other province

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	Area km^2	Population			Altitude range m		Slope	Fallows		
			Total	Abs	Den	Low	High		Veg	Sht	Per
1501	1	1259	8530	7	7	400	2000	5	5	0	3
1502	1	18	927	9	52	1000	1800	2	5	0	2
1503	1	217	3395	10	16	1200	2200	3	3	0	2
1503	2	0	0	0	0	1200	2200	3	5	0	3
1504	1	7822	13851	9	2	50	150	2	5	0	3
1505	1	144	96	14	1	400	1800	5	5	0	3
1506	1	32	1883	23	59	0	100	2	5	0	3
1507	1	3345	52044	17	16	0	800	5	5	0	3
1508	1	93	3320	9	36	100	500	3	5	0	3
1509	1	24	789	9	33	1600	2200	5	5	0	3
1510	1	45	3125	10	69	1700	2200	5	3	0	2
1511	1	2064	17536	9	8	0	800	5	5	0	3

KEY

Subsys	Subsystem
Area km^2	Area of System

Population

Total	Resident population 1980
Abs	Absent population (%)
Den	Population density (persons/km^2)

Fallows

Veg	Type of Fallow vegetation
Sht	Short fallows
Per	Long fallow period

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	Staple crops			Narcotic crops
		Most import	Important	Present	
1501	1	13	05-11	02-04-05-11-13-14	5
1502	1	11-13	05	02-04-05-11-13	5
1503	1	11	00	02-11-13	5
1503	2	13	00	13	5
1504	1	09	00	02-09-11-13	2-4-5
1505	1	00	04-05-11-13	02-04-05-09-11-13	5
1506	1	00	02-06-09-11-13	02-04-05-06-09-11-13-15	2-4-5
1507	1	09	02-05-06-13	02-05-06-09-11-13-14-15	2-4-5
1508	1	15	02-06-09-13-14	02-05-06-09-11-13-14-15	2-4-5
1509	1	11-13	00	02-11-13	5
1510	1	11	13	02-11-13	5
1511	1	09	02-13	02-05-09-11-13-14	2-4-5

KEY

Subsys Subsystem

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	Vegetable crops	Fruit crops	Nut crops
1501	1	01-02-08-09-10-11-13-15-21-23	08-15	01-03-08-09
1502	1	01-07-08-09-10-13-21	02-08-15	08
1503	1	01-03-06-09-10-13-21	08-15	08-09
1503	2	03-06-09-10-13-21	08-15	08-09
1504	1	01-02-09-10-11-14-16-17-21-23	08-12-15-16	01-04-11
1505	1	01-08-09-10-11-13-16-21-23	08-15-12-13	01
1506	1	01-02-07-09-10-15-16-23-25	12-15-16	01
1507	1	01-02-05-09-15-16-21-23-27	07-08-12-13-15-16	01-06-10
1508	1	01-02-05-09-10-15-16-21-23-27	07-08-12-13-15-16	01-06
1509	1	01-03-06-08-09-10-13-21	02-15	08-09
1510	1	01-03-06-09-10-13-21-28	15	08-09
1511	1	01-02-09-11-13-15-16-23	08-12-15-16	01-04-06

KEY

Subsys Subsystem

AGRICULTURAL SYSTEM DATA LISTING - CODES **Province: 15 West Sepik**

System	Sub	Segregation		Crop	Gard types		Soil fertility maintenance techniques						
	sys	Gar	Crp	Seq	Mix	H'ld	Leg	Tre	Com	Man	Isl	Sil	Fer
1501	1	2	2	0	0	1	0	0	0	0	0	0	0
1502	1	2	2	0	0	1	0	1	0	0	0	0	0
1503	1	1	1	0	0	1	0	1	0	0	0	0	0
1503	2	0	1	0	0	0	0	0	0	0	0	0	0
1504	1	0	1	0	0	0	0	0	0	0	0	0	0
1505	1	3	1	0	0	0	0	0	0	0	0	0	0
1506	1	0	2	0	0	0	0	0	0	0	0	0	0
1507	1	1	1	0	0	1	0	0	0	0	0	0	0
1508	1	0	1	1	0	1	0	0	1	0	0	0	0
1509	1	3	1	0	0	1	0	0	0	0	0	0	0
1510	1	3	1	0	0	1	0	2	0	0	0	1	0
1511	1	0	1	0	0	1	0	0	0	0	0	0	0

KEY

Subsys Subsystem

Segregation

Gar Garden

Crp Crop

Crop seq Crop sequences

Gard types **Garden types**

Mix Mixed vegetable gardens

H'ld Household gardens

Soil fertility maintenance techniques

Leg Legume rotation

Tre Planted tree fallow

Com Compost

Man Animal manure

Isl Island bed

Sil Silt from floods

Fer Inorganic fertilizer

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	Management techniques											
		Water		Soil						Fallow		Other	
		Irr	Drn	Pig	Till	Hol	Bar	Mul	Mec	Brn	Cut	Fen	Stk
1501	1	0	0	0	0	0	0	0	0	1	0	2	1
1502	1	0	0	0	0	0	0	0	0	1	0	2	1
1503	1	0	1	0	0	0	0	0	0	1	0	2	1
1503	2	0	0	0	0	0	0	0	0	1	0	1	0
1504	1	0	0	0	0	0	0	0	0	3	0	0	1
1505	1	0	0	0	0	0	0	0	0	2	0	2	1
1506	1	0	0	0	0	0	0	0	0	3	0	2	0
1507	1	0	0	0	0	0	1	0	0	3	0	1	1
1508	1	0	0	0	0	0	1	0	0	3	0	2	3
1509	1	0	0	0	0	0	0	0	0	1	0	2	1
1510	1	0	1	0	0	0	0	0	0	1	0	2	1
1511	1	0	0	0	0	0	0	0	0	3	0	1	0

KEY

Subsys Subsystem

Management techniques

Water management

Irr Irrigation

Drn Drainage

Soil management

Pit Pigs placed in gardens

Till Tillage

Hol Deep holing (for yams)

Bar Soil retention

Mul Mulching

Mec Mechanized soil tillage

Fallow management

Brn Burning of cut vegetation

Cut Fallow cut onto crops

Other

Fen Fencing

Stk Staking of crops

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub sys	Management techniques						Crop planting seasonality		Cropping intensity	R value
		Soil mounds				Garden beds					
		Vsm	Sm	Md	Lge	Sq	Lg	Maj	Min		
1501	1	0	1	0	0	0	0	0	0	1	5
1502	1	0	1	0	0	0	0	0	0	1	9
1503	1	1	0	0	0	0	0	0	0	1	9
1503	2	0	0	0	0	0	0	0	0	1	5
1504	1	0	1	0	0	0	0	0	0	1	5
1505	1	0	1	0	0	0	0	0	0	1	5
1506	1	0	1	0	0	0	0	0	0	1	5
1507	1	0	1	0	0	0	0	2	2	1	5
1508	1	0	0	0	0	0	0	3	3	1	5
1509	1	1	0	0	0	0	0	0	0	1	5
1510	1	1	0	0	0	0	0	0	0	1	9
1511	1	0	0	0	0	0	0	2	2	1	5

KEY

Subsys Subsystem

Management techniques

Soil mounds

Vsm Very small
Sm Small
Md Medium
Lge Large

Garden beds

Sq Square
Lg Long

Crop planting seasonality

Maj Dominant
Min Other crops

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub	Cash income sources											
	sys	An	Bet	Crd	Cat	Chi	Coc	Cnt	CfA	CfR	Crc	Fwd	Fsh
1501	1	1	0	0	0	0	0	0	0	0	0	0	0
1502	1	0	0	0	0	0	0	0	0	0	0	1	0
1503	1	0	0	0	0	0	0	0	0	0	0	0	0
1503	2	0	0	0	0	0	0	0	0	0	0	0	0
1504	1	0	0	0	0	0	0	0	0	0	1	0	0
1505	1	1	0	0	0	0	0	0	0	0	0	0	0
1506	1	0	2	0	0	0	0	0	0	0	0	0	0
1507	1	0	0	0	0	0	1	0	0	1	0	0	0
1508	1	0	0	0	0	0	1	0	0	1	0	0	0
1509	1	0	0	0	0	0	0	0	0	0	0	0	0
1510	1	0	0	0	0	0	0	0	0	0	0	0	0
1511	1	0	1	0	0	0	0	0	0	0	0	0	0

KEY

Subsys Subsystem

Cash Income Sources

An	Animal skins	Chi	Chillie	CfR	Coffee Robusta
Bet	Betel nut	Coc	Cocoa	Crc	Crocodile
Crd	Cardamom	Cnt	Coconut	Fwd	Firewood
Cat	Cattle	CfA	Coffee Arabica	Fsh	Fish

AGRICULTURAL SYSTEM DATA LISTING - CODES Province: 15 West Sepik

System	Sub	Cash income sources										
	sys	Fod	Op	Pot	Pyr	Ric	Rub	Shp	Tea	Tob	Ot1	Ot2
1501	1	1	0	0	0	0	0	0	0	0	0	0
1502	1	2	0	0	0	0	0	0	0	0	0	0
1503	1	1	0	0	0	0	0	0	0	0	0	0
1503	2	1	0	0	0	0	0	0	0	0	0	0
1504	1	0	0	0	0	0	0	0	0	1	0	0
1505	1	0	0	0	0	0	0	0	0	0	0	0
1506	1	1	0	0	0	0	0	0	0	0	0	0
1507	1	1	0	0	0	0	0	0	0	0	0	0
1508	1	0	0	0	0	1	0	0	0	0	0	0
1509	1	0	0	0	0	0	0	0	0	0	1	0
1510	1	2	0	1	0	0	0	0	0	0	0	0
1511	1	1	0	0	0	0	1	0	0	0	0	0

KEY

Subsys Subsystem

Cash Income Sources

Fod	Fresh food	Ric	Rice	Tob	Tobacco
Op	Oil Palm	Rub	Rubber	Ot1	Other 1
Pot	Potato	Shp	Sheep	Ot2	Other 2
Pyr	Pyrethrum	Tea	Tea		

AGRICULTURAL SYSTEM DATA LISTING - CODES **Province: 15 West Sepik**

System	Sub sys	Survey 1				Survey 2				Survey 3			
		Date mth yr	Period yrs	Sv tp	Sv in	Date mth yr	Period yrs	Sv tp	Sv in	Date mth yr	Period yrs	Sv tp	Sv in
1501	1	01 87	-	4	BJA	06 91	-	3	RMB	05 92	-	3	RMB
1502	1	05 82	-	2	RMB	06 91	-	3	RMB	- -	-	-	
1503	1	11 79	-	3	RMB	05 92	-	3	RMB	- -	-	-	
1503	2	- -	-	-		- -	-	-		- -	-	-	
1504	1	06 91	-	3	RMB	- -	-	-		- -	-	-	
1505	1	05 92	-	3	RMB	01 96	-	4	CB	- -	-	-	
1506	1	05 82	-	3	RMB	06 91	-	3	RMB	- -	-	-	
1507	1	05 82	-	4	RMB	06 91	-	3	RMB	06 91	-	4	A/H
1508	1	05 81	-	2	RMB	07 91	-	2	BJA	07 91	-	-	RLH
1509	1	05 92	-	3	RMB	- -	-	-		- -	-	-	
1510	1	11 79	-	3	RMB	05 92	-	3	RMB	- -	-	-	
1511	1	05 82	-	4	RMB	06 91	-	3	RMB	06 91	-	4	A/H

KEY

Subsys	Subsystem	A/H	B.J. Allen/R.L. Hide
		CB	C. Ballard
		BJA	B. J. Allen
Sv tp	Survey type	RMB	R. M. Bourke
Sv in	Surveyor initials	RLH	R. L. Hide

6. LISTINGS OF RURAL VILLAGES (CENSUS UNITS) INDEXED TO AGRICULTURAL SYSTEMS

All rural village Census Units in the 1980 National Population Census which are locatable on either the 1980 or 1990 Census Maps are assigned to an Agricultural System. The village name, National Population Census identification codes (Province, District, Census Division, Census Unit), population and Agricultural System number for each village is held as a single record in a population database (AGPOP). District and Census Division codes for this Province are listed in Appendix A.2.

This section provides three different listings from that database of rural villages indexed by Agricultural Systems:

6.1 Rural villages listed in census order (District, Census Division).

6.2 Rural villages listed in alphabetical order.

6.3 Rural villages listed by Agricultural System number (alphabetically within agricultural systems) with PNGRIS Resource Mapping Unit (RMU) numbers.

Abbreviations used are:

Dist	District name and number (see Appendix A.2)
Div	Census Division number (see Appendix A.2)
Population	1980 National Population Census count of population in a Unit
RMU	Provincial Resource Mapping Unit number (PNGRIS)
System	Agricultural System number
Village	Census Unit name
Unit	Census Unit number

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
DISTRICT	1 Aitape		
Division	1 Batai		
1	AFUA	55	1507
2	ASAPAS	73	1507
3	BALUP	113	1507
4	CHAROK	63	1507
5	CHINAPELLI	124	1507
6	DEIA	132	1507
7	LABUAIN	281	1507
8	LEMIENG	300	1507
9	MALIN	71	1507
10	MATAPAU	119	1507
11	MIHET	82	1507
12	PAUP	517	1507
13	PRO	113	1507
14	SUAIN NO1	382	1507
15	SUAIN NO2	203	1507
16	ULAU NO1	452	1507
17	ULAU NO2	341	1507
18	VOKHAU	222	1507
19	WALIHIGA	110	1507
20	WOMSIS	345	1507
21	YAKAMUL NO1	315	1507
22	YAKAMUL NO2	467	1507
Division	2 Aitape Islands		
1	ALI ISLAND	365	1507
2	ANGEL ISLAND	95	1507
3	SELEO ISLAND	80	1507
4	TUMLEO ISLAND	258	1507
5	YAKOI (MAINLAND)	269	1507
Division	3 Siau		
1	AITERAP	118	1507
2	KAPOAM	102	1507
3	KARA/AUSI	85	1507
4	KARAITE	103	1507
5	LAMPU	255	1507
6	LUPAI	44	1507
7	MAROK	180	1507
8	PAIAWA	206	1507
9	PES	152	1507
10	PORO	335	1507
11	PULTULUL	201	1507
12	SIAUTE	321	1507
13	SEIYUM	69	1507
14	TELES	348	1507
15	WAUNINGI	102	1507
16	YONGITE	48	1507
Division	4 Sissano		
1	AINDRIN	320	1507
2	AIPOKON	393	1507
3	AMSOR	233	1507
4	AMSOR (SISSANO)	269	1507
5	AMSUKU	107	1507
6	AROP NO1	782	1507
7	AROP NO2	378	1507
8	BARIRA	202	1507
9	ROMEI	109	1507
10	GOINIRI	186	1507
11	KAIYE	39	1507
12	KARANDU	89	1507
13	MAFOKA	75	1507
14	MAINDRON (SISSANO)	348	1507
15	MAINYA (SISSANO)	238	1507
16	MAINYEU (MALOL)	161	1507
17	MORI	91	1507
18	MUMURU	71	1511
19	NEBIKE	39	1511
20	NENGIAN	162	1507
21	NIMAS (SISSANO)	416	1507
22	PO	177	1507
23	PUINDU	100	1507
24	RAINUK	81	1507
25	RAMO	374	1507
26	SAVAMUI	34	1511
27	SARAI	133	1507
28	SUMO	303	1507
29	TAINIAPIN (MALOL)	231	1507
30	UIAN (MALOL)	198	1507
31	WALWALI	90	1507
32	WARAPU	1169	1507
DISTRICT	2 Vanimo		
Division	5 Vanimo West Coast		
1	MUSU	138	1506
2	VANIMO	560	1506
3	WAROMO	518	1506
4	WUTUNG	335	1506
5	YAKO	221	1506
Division	6 Vanimo East Coast		
1	ISI	149	1511
2	NINGERA	294	1511
3	NOWAGE	362	1511
4	ONEI	92	1511
5	PINO	163	1511
6	PUARI	125	1511
7	RAWO	128	1511
8	TARIS	113	1511
9	WATERSTONE	111	1506
Division	7 Kilimeri		
1	AIRU	91	1511
2	AIYAWOU	166	1511
3	AULI	79	1511
4	AWOL	127	1511
5	ELAU	63	1511
6	ILUP	224	1511
7	ISI NO1	140	1511
8	ISI NO2	132	1511
9	KILIPAU	164	1511
10	KILIWIS	234	1511
11	KRISA	254	1511
12	OMULA	105	1511
13	OSSIMA	216	1511
14	OSAL	111	1511
15	SOSI	123	1511
Division	8 Bewani		
1	AINBAI	61	1511
2	AMOI	143	1511
3	APWAMBO	143	1511

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
4	ELIS	37	1511
5	IDOLI	133	1511
6	NAMBES	72	1511
7	SKOTIAHO	139	1511
8	SOMBOI	123	1511
9	NUNPUFF	34	1511
10	PIGI	58	1511
11	SRAM	100	1511
12	TAPOS	46	1511
13	YAUKONO	178	1511
Division	9 Imbio		
1	IMBIO NO1	130	1511
2	IMBIO NO2	114	1511
3	IMBRINIS	193	1511
4	KLIFAS (WARA MAYU)	61	1511
5	SAMARARU	32	1511
6	SUMUMINI	141	1511
7	YO	114	1511
DISTRICT	3 Amanab		
Division	10 Imonda Local		
1	DADNDA	136	1511
2	DAUCHENDI	142	1511
3	DAUNDI	51	1511
4	DOPONENDI	226	1511
5	EPMI 1	156	1511
6	IMONDA	278	1511
7	KOLOSA	137	1511
8	KWEK	94	1511
9	MACHENDI	110	1511
11	MINK	81	1511
12	NETWOND 1	120	1511
13	NETWOND 2	152	1511
14	NAMOLA	203	1511
15	OMOL	77	1511
16	PENDESI	84	1511
17	POPAN	91	1511
18	SAINENDI	67	1511
19	SIMOG	144	1511
20	SWACHBARU	75	1511
21	SWACHKETJIL	86	1511
22	TOKONENDI	113	1511
23	UM	48	1511
24	WAINDA	179	1511
25	WATAPE	164	1511
26	YUWETLA	53	1511
Division	11 Bembi		
1	FAS NO1	150	1511
2	FAS NO2	123	1511
3	FUGERI	91	1511
4	FUGUMUI	127	1511
5	NEBIKE	137	1511
6	TAMINA NO1	73	1511
7	TAMINA NO2	32	1511
Division	12 Waina Sowanda		
1	PUNDA	193	1511
2	SOWANDA	258	1511
3	UMEDA	260	1511
4	WAINA	231	1511
5	WIALA	91	1511
Division	13 Dera		
1	AKIMARI NO1	51	1511
2	AKIMARI NO2	52	1511
3	BAMBOL	75	1511
4	KAMBERATORO	165	1511
5	LIHEN	64	1511
6	MAMAMURA	159	1511
7	MANGAU	75	1511
8	MONGROVEI	74	1511
9	NIMBERATORO	95	1511
10	NINDEBAI	114	1511
11	ORKWANDA	33	1511
12	TAMARBEK	37	1511
13	WAGURINDA	67	1511
14	WAHAI	77	1511
15	YAMAMINDA	106	1511
Division	14 Amanab Local		
1	AHERI	96	1511
2	AKRAMINAG	111	1511
3	AURUMP	140	1511
4	BANANAG	22	1511
5	BIPAN	78	1511
6	EINOKNERI	122	1511
7	IAFAR NO1	84	1511
8	IAFAR NO2	76	1511
9	IAFAR NO3	52	1511
10	IBAGUM	137	1511
11	IFIGERI	57	1511
12	IFRAMINAG	106	1511
13	IVEIG	191	1511
14	KABAINERI	101	1511
15	KWOFINAU	194	1511
16	MASINERI	55	1511
17	MOURI	58	1511
18	MOWAINERI	126	1511
19	NAI NO2	122	1511
20	NAINERI	307	1511
21	NAMBAINERI	84	1511
22	OWENIAK	91	1511
23	PETAINERI NO1	169	1511
24	PETAINERI NO2	63	1511
25	SWRAMINAG	88	1511
26	WAINERI	102	1511
27	WOFNERI	206	1511
28	WAMARU	259	1511
29	WOGINERI	70	1511
30	YUMOR NO1	74	1511
31	YUMOR NO2	28	1511
Division	15 Kwomtari		
1	AIAMINA	73	1507
2	BAIBAI	73	1504
3	BAIBERI	89	1504
4	EKAS	39	1504
5	FAS NO3	91	1504
6	FINAMOI	39	1504
7	GURIASO	141	1504
8	ITOMI	85	1504
9	KWOMTARI	86	1504

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
10	MANGO	63	1504
11	MARAGIN	99	1504
12	MUFUANA	68	1504
13	PIEMI	56	1504
14	WURUBAI	58	1507
15	UTAI	110	1504
16	WAKRANI	39	1504
17	YAUURI	109	1504
18	YAFTIMBI	72	1504
19	YENABI	129	1504
Division	16 Nai Faringi		
1	AKRANI	44	1511
2	AMANDAN	70	1511
3	BARIBARI	60	1511
4	BIAKA	207	1511
5	BIBRIARI	153	1511
7	KONABASI	145	1504
8	KAWARAMUN	154	1511
9	MEREWE	59	1511
10	NAI NO1	68	1511
11	PURUMUN	116	1511
12	SENAGI	80	1511
13	UNUPAI	45	1511
14	WAMU	77	1511
Division	17 Iuri		
1	AUIA NO1	30	1504
2	AUIA NO2	91	1504
3	FONGWINAM	132	1511
4	IURI 1	103	1511
5	IURI 2	82	1511
6	KAMBRIAP	182	1504
7	MONGO	72	1511
8	PANAGGAM	108	1511
9	TENGIRAPU	118	1511
10	TERAUWI	102	1504
11	USARI	46	1504
Division	18 Green River Local		
1	ABARU	181	1504
2	AMINI	130	1504
3	DIERU	208	1504
4	IBURU	238	1504
5	MINI ABURU	167	1504
6	OGRU	167	1504
7	SAMANAI	143	1504
8	SIMIA	34	1504
Division	19 Nagu		
1	AUYA	45	1504
2	BUSA	70	1504
3	DILA	119	1504
4	HILA	89	1504
5	KARBONI	68	1504
6	MARAKWINI	44	1504
7	NAGATMAN	111	1504
8	RAWEI	82	1504
9	TERA	41	1504
10	TILA	89	1504
11	WAGRONI	32	1504
12	WEITERA	19	1504
Division	20 Yabalhai		
1	BAIO	117	1504
2	BAIUWAI	132	1504
3	BIAKE NO1	25	1504
4	BIAKE NO2	105	1504
5	BIFRO	240	1504
6	BUNA	117	1504
7	HUFI	159	1504
8	IABARU	415	1504
9	ISU	111	1504
10	KASEIRU	137	1504
11	KOBARARU	123	1504
12	MAHANI	138	1504
13	MUKVASI	219	1504
Division	21 Idam		
1	BISIABRU	106	1504
2	IDAM 1	343	1504
3	IDAM 2	255	1504
4	WOKOMO	35	1504
Division	22 Rocky Peak		
1	AMTO	205	1504
2	BEIMAP	88	1504
3	BUGIAME	50	1504
4	FARU	44	1504
5	KUMASA	59	1504
6	SEIAWI	111	1504
7	SENOU	76	1504
8	WAGU	113	1504
DISTRICT	4 Telefomin		
Division	23 Yapsei Local		
1	ILEIS	41	1504
2	IMNAI NO1	166	1511
3	IMNAI NO2	78	1511
4	WAURU 1	160	1504
5	WAURU NO2	46	1504
Division	24 West Mianmin		
1	BAITA	23	1511
2	BITAPENA	60	1501
3	BOITATEMA	40	1511
4	EGIBUNA	49	1501
5	IBORIO	109	1501
6	IVIKMIN-SEPIK	68	1501
7	IVIKMIN-KARENMIN	54	1501
8	KARENMIN (SEPIK)	29	1501
10	KEMEIMIN	40	1511
11	KIMIASOMIN	51	1501
12	NAMAUWI	26	1511
13	SEIMAMIN-TABU	39	1501
14	SEREWANIAMAN	47	1501
15	URA	18	1511
16	URAPMIN	102	1501
17	FUTIPMIN	29	1501
Division	25 Atbalmin		
1	BAKADING	126	1501
2	BILKA	108	1501
3	BONKEMBIL	117	1501
4	BRUNEIOK	18	1501
5	BUSILMIN	351	1501
6	DEFAKBIL	189	1501

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
7	FIAMOK	93	1501
8	FUNGAL	106	1501
9	IAMDELMIN	94	1501
10	KURIPDING	127	1501
11	MUTUTEIMUN	194	1501
12	MONGABIP	97	1501
13	TUMOLBIL	346	1501
14	UMFOKMIN	233	1501
15	YUGUBIL	46	1501
Division	26 East Mianmin		
1	AMAROMIN	46	1501
2	BOVRIPMIN	116	1501
3	FUIARIMIN	48	1501
4	MABWAIMIN	102	1501
6	SOGAMIN	157	1501
7	TEMSAPMIN	68	1501
8	TIMELMIN AIRSTRIP	218	1501
9	USAREIMIN	70	1501
10	WAMEIMIN NO1	67	1501
11	KAREN	61	1501
Division	27 Telefomin Local		
1	ABUNGKAMIN	104	1501
2	AFOGAVIP	118	1501
3	AGAMTAVIP	68	1501
4	ANKAVIP-KIALIKMAN	164	1502
5	ATEMTKIAKMIN	113	1501
6	BILTAVIP	145	1501
7	BOFULMIN-TIFALMIN C.	326	1501
8	BOGALMIN	138	1502
9	BOLVIL	189	1501
10	DROLENGAM	242	1502
11	FAMUKMIN FERAMIN C.	S241	1501
12	FERAMTIGIN	62	1502
13	IGINFUMAVIP	58	1501
14	INANTIGIN	89	1501
15	IVATIGIN	46	1501
16	KIALIKMAN FERAMIN	339	1501
17	KOBRENMIN(TELEFOMIN)	148	1502
18	KOBRENMIN ELIPTAMIN	244	1501
19	KOBRENMIN (FERAMIN)	192	1501
20	KOMDAVIP	270	1501
21	MISINMIN NO1	83	1501
22	MISINMIN NO2	116	1501
23	OFEKTAMAN	98	1501
24	OKBILAVIP	349	1501
25	OKSIMIN	154	1501
26	SEPIKIALIKMIN	61	1501
27	SIKTAMIN	58	1501
28	TAGATEMTIGIN	125	1501
29	TELEFOLIP	173	1502
30	TERAPDAVIP	109	1501
31	URAPMIN	339	1501
32	UTEMTIGIN	89	1501
Division	28 Nenataman		
1	SILIAMBIL	88	1501
2	UNAMO	77	1501
3	WABIA	106	1501
4	WAMEIMIN NO2	54	1501
5	FUMENAVIP	45	1501
6	TAVELDAN	157	1501
951	FRIEDA BASE CAMP	45	1501
Division	29 Terenap-Tekin		
1	ARANIMAP	408	1510
2	BETIANAP	250	1503
3	DIVANAP	726	1510
4	KUIVA	121	1503
5	KUSANAP	657	1510
6	MITAGANAP	336	1503
7	TEKAP	639	1510
8	TERANAP	537	1503
9	TOMIANAP	381	1510
10	WAULUP	211	1510
Division	30 Bak-Bimin		
1	BIMIN	610	1509
2	DABURAP	681	1503
3	DUBAN	109	1503
4	GAUA	578	1503
5	KWEPTANAP	618	1503
6	SUNGTEM	179	1509
7	UMANAP	136	1503
Division	31 Om River		
1	AKIAPMIN	31	1505
2	GOBI	29	1503
3	LEMBANA	19	1505
4	MONDUBAN	32	1505
5	TOMIANA NO2	14	1505
Division	32 Up Leonard Schultze		
1	TOWARE	103	1510
DISTRICT	5 Lumi		
Division	33 West Wapei		
1	ALKULA	146	1507
2	GARA	89	1507
3	INEBU	462	1507
4	KABORI NO1	91	1507
5	KABORI NO2	114	1507
6	KAKOI	164	1507
7	KALINGUM	134	1507
8	KUATIM	68	1507
9	KWUMTUM	52	1507
10	MAUWIL	100	1507
11	MOLMO	238	1507
12	PELAMA	137	1507
13	PIAKO	117	1507
14	SIAMA	88	1507
15	TIMENI	64	1507
16	URUTEI	45	1507
17	YEBIL	291	1507
18	YOKAMA	44	1507
Division	34 Somoro		
1	AMAITEM	48	1507
2	ERETEI NO1	179	1507
3	FLOBUM	50	1507
4	KALAU	11	1507
5	KARAITEI	57	1507
6	KARAITEM	113	1507
7	KUMNATEI	105	1507
8	KUPOAM	158	1507

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
9	MAIWETEM	52	1507
10	MIMBITEI	81	1507
11	MINATEI NO1	241	1507
12	MINATEI NO2	54	1507
13	MIWAUTEI	191	1507
14	MOKAI	87	1507
15	PAI	95	1507
16	RAUWETEI	136	1507
17	SARBOTEI	91	1507
18	SIBITEI	72	1507
19	SIGAITEI	115	1507
20	SUGOITE	56	1507
21	TAUWITEI	80	1507
22	TOFUNGU	66	1507
23	TOLGETI	120	1507
24	WABUTEI	163	1507
25	WAGOITEI	66	1507
26	WAI'ELI	40	1507
27	WANTIPI	22	1507
28	WIGOTEI	292	1507
29	WILBEITEI	137	1507
30	WILIUM	179	1507
31	WUGUBLI	81	1507
32	YONGITEI	145	1507
Division	35 Lumi Local		
1	ALI	137	1507
2	BIN	118	1507
3	BURU'UM	117	1507
4	ERETEI NO2	174	1507
5	KARATEI	158	1507
6	KEIBAM	141	1507
7	KLELBUF	115	1507
8	LAU'UM	118	1507
9	LINGI	95	1507
10	LUMI	160	1507
11	MABUL	51	1507
12	MAUI	195	1507
13	MILIOM	63	1507
14	NAREITEI	92	1507
15	ORUTEI	105	1507
16	OTEI	198	1507
17	OTEMGI	75	1507
18	SABTEI	38	1507
19	SAINDEI	151	1507
20	SEINAM	105	1507
21	SIBITEI	129	1507
22	TALBIPI	231	1507
23	TANGEI	64	1507
24	TAUTEI	228	1507
25	TEBALI	170	1507
26	TELOTEI	135	1507
27	TWAITEI	67	1507
28	WABUF	143	1507
29	WILKILI	145	1507
Division	36 South West Wapei		
1	BULAWA	49	1507
2	GALGATU	50	1507
3	GILIATO	74	1504
4	GUTAIYA	109	1507
5	KAMNUM	112	1507
6	KERNAM	142	1504
7	KWIEFTIM	85	1504
8	MAUROM	172	1504
9	PARISKO	82	1507
10	TUBUM	52	1507
11	WIUP	55	1507
12	WOKIEN	98	1504
13	YEKILO	253	1504
Division	37 South Wapei		
1	ABRAU	207	1504
2	ALENDAMI	199	1504
3	AKWOM	220	1504
4	AUGOM	132	1504
5	ALAI	127	1504
6	AMENI	131	1504
7	GWIDAMI	274	1504
8	IWANI	182	1504
9	MAGLERI	475	1504
10	MANTOPAI	152	1504
11	NAMI	190	1504
12	NAUM	153	1504
13	NORAMBALIP	214	1504
14	PABEI	196	1504
15	WARUKORI	159	1504
16	YAKALTIM	229	1504
17	YAWARI	208	1504
18	YARU	162	1504
19	YAWA	385	1504
20	YEGARAPI	232	1504
21	YILUI	486	1504
Division	38 West Au		
2	EIKIL-YAMOUM	130	1507
3	HAPSEIM	192	1507
4	LALWI	85	1507
5	LILAL	125	1507
6	LIPOAM-BAIRAP	196	1507
7	MAMBEL	60	1507
8	NAKIL	97	1507
9	PIEM	149	1507
10	PIMON	189	1507
11	PINKIL	101	1507
12	PUANG-MESI	342	1507
13	TUMENTONIK	195	1507
14	WARIN	174	1507
15	WETEILI	88	1507
16	WITIKIN	167	1507
17	WITITAI	168	1507
18	WESEN-WITWAN	161	1507
19	WITWEIS	235	1507
20	YEMNU	381	1507
21	YILI	286	1507
22	YUTABI	81	1507
23	YAMOUM	125	1507
Division	39 East Au		
1	AUGUGANAK	226	1507
2	AUANG	82	1507
3	BOGASIP	272	1507
4	BRUGAP	276	1507

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System
5	LAINGIM NO1	186	1507
6	LAINGIM NO2	208	1507
7	MAIMBEL	416	1507
8	MUPUN	118	1507
9	MUSU	124	1507
10	NINGIL	506	1507
11	NUNSI	72	1507
12	RAUIT	415	1507
13	SIKEL	152	1507
14	SOLOKU NO1	100	1507
15	SOLOKU NO2	77	1507
16	WEKINT	183	1507
17	WINALUK	66	1507
18	WUBLAGIL	236	1507
19	WULUKUM	272	1507
20	YANGKOK	228	1507
21	YEMLU	85	1507
22	YUWIL	332	1507
DISTRICT 6	Nuku		
Division 40	West Palei		
1	BINARA	190	1507
2	BOINI	224	1507
3	MAI	207	1507
4	MUKU	175	1507
5	MUNUMBAL	131	1507
6	ORI	141	1507
7	SABIG	287	1507
8	SIMBAP	128	1507
9	SURIMORTA	138	1507
10	WALGON	117	1507
11	WANALI	101	1507
12	WARA	80	1507
13	WEIKI	115	1507
14	WINBE	141	1507
15	WOWIL	177	1507
16	WURO	154	1507
17	YAMBIL	255	1507
18	YERISI	279	1507
19	YIRKIN	53	1507
20	YOULPA	171	1507
Division 41	Mai Mai Namblo		
1	AIMUKILI	83	1507
2	ENGIEP	158	1507
3	IMBIYIP	238	1507
4	KALEM	122	1507
5	LAEKO	287	1507
6	LIBUAT	238	1507
7	MAIMAI NO1 & 2 & 3	214	1507
8	MAKAFIM	302	1507
9	MUKILI	266	1507
10	RANGWEI	200	1507
11	TEREMES	139	1507
12	WANIWOMAKA	244	1507
13	WEMIL	222	1507
14	WOMBIU	277	1507
15	YEMEREBA	204	1507
16	YULEM	145	1507
Division 42	East Palei		
1	ASIER	231	1507
2	KUWALVU	116	1507
3	MARAKUMBA	137	1507
4	MONADIN	330	1507
5	NANGIN	158	1507
6	SENGI	98	1507
7	SUAU	197	1507
8	SUMAMBU	115	1507
9	SUNDUN	155	1507
10	WAMBI	67	1507
11	WERANYUWOK	165	1507
12	WOMGRIR	185	1507
13	WUMERAU	188	1507
14	YADAGARO	141	1507
15	YAMEGIL	140	1507
16	YUPUNDA	79	1507
17	YAUAN	197	1507
18	YILIWAMBIL	156	1507
19	YANUGEN	116	1507
951	KING	166	1507
952	MUP	57	1507
Division 43	Seim		
1	ABIGU	137	1508
2	ANGRA	210	1508
3	APDUWANO	272	1508
4	ATERUM	189	1508
5	AWES	96	1508
6	HAMBANGRI	461	1508
7	HAMBASAMBA	532	1507
8	KEMBIEM	189	1507
9	MAMBU	183	1508
10	POKLO	123	1508
11	SABIGA	140	1508
12	SIBITELA	229	1507
13	SULUNUKU	233	1508
14	USITAMO	287	1507
15	YIRIWANDI	351	1508
Division 44	Makru Klaplei		
1	AKOSAMEI NO1	723	1508
2	AKOSAMEI NO2	202	1508
3	IFKINDU	477	1507
4	KLAPLEI NO1	550	1507
5	KLAPLEI NO2	459	1507
6	KLAPLEI NO3	383	1507
7	MANTSUKU	427	1507
8	NUKU	395	1507
9	SELEPUT	256	1507
10	WILWIL	675	1507
11	YIMINUM	452	1507
Division 45	Wan Wan		
1	BEL	47	1504
2	GAMO	264	1507
3	NAU!ALU	133	1504
4	SEMENGLA	249	1507
5	TUGINARO	349	1507
6	ULAP	175	1507
7	UNDU	101	1507
8	VEI	124	1507
9	WOLMALOO	126	1504

6.1 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN CENSUS ORDER

Province: 15 West Sepik

	Village	Population	System	Village	Population	System
10	WOSAPOM	167	1507			
11	WULBOWE	193	1507			
12	YAUWA	132	1507			
13	YIMAUWI	251	1507			
14	YIMIN	177	1504			
15	YIMUT	317	1507			

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
ABARU	3	18	1	1504
ABIGU	6	43	1	1508
ABRAU	5	37	1	1504
ABUNGKAMIN	4	27	1	1501
AFOGAVIP	4	27	2	1501
AFUA	1	1	1	1507
AGAMTAVIP	4	27	3	1501
AHERI	3	14	1	1511
AIAMINA	3	15	1	1507
AIMUKILI	6	41	1	1507
AINBAI	2	8	1	1511
AINDRIN	1	4	1	1507
AIPOKON	1	4	2	1507
AIRU	2	7	1	1511
AITERAP	1	3	1	1507
AIYAWOU	2	7	2	1511
AKIAPMIN	4	31	1	1505
AKIMARI NO1	3	13	1	1511
AKIMARI NO2	3	13	2	1511
AKOSAMEI NO1	6	44	1	1508
AKOSAMEI NO2	6	44	2	1508
AKRAMINAG	3	14	2	1511
AKRANI	3	16	1	1511
AKWOM	5	37	3	1504
ALAI	5	37	5	1504
ALENDAMI	5	37	2	1504
ALI	5	35	1	1507
ALI ISLAND	1	2	1	1507
ALKULA	5	33	1	1507
AMAITEM	5	34	1	1507
AMANDAN	3	16	2	1511
AMAROMIN	4	26	1	1501
AMENI	5	37	6	1504
AMINI	3	18	2	1504
AMOI	2	8	2	1511
AMSOR	1	4	3	1507
AMSOR (SISSANO)	1	4	4	1507
AMSUKU	1	4	5	1507
AMTO	3	22	1	1504
ANGEL ISLAND	1	2	2	1507
ANGRA	6	43	2	1508
ANKAVIP-KIALIKMAN	4	27	4	1502
APDUWANO	6	43	3	1508
APWAMBO	2	8	3	1511
ARANIMAP	4	29	1	1510
AROP NO1	1	4	6	1507
AROP NO2	1	4	7	1507
ASAPAS	1	1	2	1507
ASIER	6	42	1	1507
ATEMTKIAKMIN	4	27	5	1501
ATERUM	6	43	4	1508
AUANG	5	39	2	1507
AUGOM	5	37	4	1504
AUGUGANAK	5	39	1	1507
AUIA NO1	3	17	1	1504
AUIA NO2	3	17	2	1504
AULI	2	7	3	1511
AURUMP	3	14	3	1511
AUYA	3	19	1	1504
AWES	6	43	5	1508
AWOL	2	7	4	1511
BAIBAI	3	15	2	1504
BAIBERI	3	15	3	1504
BAIO	3	20	1	1504
BAITA	4	24	1	1511
BAIUWAI	3	20	2	1504
BAKADING	4	25	1	1501
BALUP	1	1	3	1507
BAMBOL	3	13	3	1511
BANANAG	3	14	4	1511
BARIBARI	3	16	3	1511
BARIRA	1	4	8	1507
BEIMAP	3	22	2	1504
BEL	6	45	1	1504
BETIANAP	4	29	2	1503
BIAKA	3	16	4	1511
BIAKE NO1	3	20	3	1504
BIAKE NO2	3	20	4	1504
BIBRIARI	3	16	5	1511
BIFRO	3	20	5	1504
BILKA	4	25	2	1501
BILTAVIP	4	27	6	1501
BIMIN	4	30	1	1509
BIN	5	35	2	1507
BINARA	6	40	1	1507
BIPAN	3	14	5	1511
BISIABRU	3	21	1	1504
BITAPENA	4	24	2	1501
BOFULMIN-TIFALMIN C.	4	27	7	1501
BOGALMIN	4	27	8	1502
BOGASIP	5	39	3	1507
BOINI	6	40	2	1507
BOITATEMA	4	24	3	1511
BOLVIL	4	27	9	1501
BONKEMBIL	4	25	3	1501
BOVRIPMIN	4	26	2	1501
BRUGAP	5	39	4	1507
BRUNEIOK	4	25	4	1501
BUGIAME	3	22	3	1504
BULAWA	5	36	1	1507
BUNA	3	20	6	1504
BURU'UM	5	35	3	1507
BUSA	3	19	2	1504
BUSILMIN	4	25	5	1501
CHAROK	1	1	4	1507
CHINAPELLI	1	1	5	1507
DABURAP	4	30	2	1503
DADNDA	3	10	1	1511
DAUCHENDI	3	10	2	1511
DAUNDI	3	10	3	1511
DEFAKBIL	4	25	6	1501
DEIA	1	1	6	1507
DIERU	3	18	3	1504
DILA	3	19	3	1504

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
DIVANAP	4	29	3	1510
DOPONENDI	3	10	4	1511
DROLENGAM	4	27	10	1502
DUBAN	4	30	3	1503
EGIBUNA	4	24	4	1501
EIKIL-YAMOUM	5	38	2	1507
EINOKNERI	3	14	6	1511
EKAS	3	15	4	1504
ELAU	2	7	5	1511
ELIS	2	8	4	1511
ENGIEP	6	41	2	1507
EPMI 1	3	10	5	1511
ERETEI NO1	5	34	2	1507
ERETEI NO2	5	35	4	1507
FAMUKMIN FERAMIN C.S	4	27	11	1501
FARU	3	22	4	1504
FAS NO1	3	11	1	1511
FAS NO2	3	11	2	1511
FAS NO3	3	15	5	1504
FERAMTIGIN	4	27	12	1502
FIAMOK	4	25	7	1501
FINAMOI	3	15	6	1504
FLOBUM	5	34	3	1507
FONGWINAM	3	17	3	1511
FRIEDA BASE CAMP	4	28	951	1501
FUGERI	3	11	3	1511
FUGUMUI	3	11	4	1511
FUIARIMIN	4	26	3	1501
FUMENAVIP	4	28	5	1501
FUNGAL	4	25	8	1501
FUTIPMIN	4	24	17	1501
GALGATU	5	36	2	1507
GAMO	6	45	2	1507
GARA	5	33	2	1507
GAUA	4	30	4	1503
GILIATO	5	36	3	1504
GOBI	4	31	2	1503
GOINIRI	1	4	10	1507
GURIASO	3	15	7	1504
GUTAIYA	5	36	4	1507
GWIDAMI	5	37	7	1504
HAMBANGRI	6	43	6	1508
HAMBASAMBA	6	43	7	1507
HAPSEIM	5	38	3	1507
HILA	3	19	4	1504
HUFI	3	20	7	1504
IABARU	3	20	8	1504
IAFAR NO1	3	14	7	1511
IAFAR NO2	3	14	8	1511
IAFAR NO3	3	14	9	1511
IAMDELMIN	4	25	9	1501
IBAGUM	3	14	10	1511
IBORIO	4	24	5	1501
IBURU	3	18	4	1504
IDAM 1	3	21	2	1504
IDAM 2	3	21	3	1504
IDOLI	2	8	5	1511
IFIGERI	3	14	11	1511
IFKINDU	6	44	3	1507
IFRAMINAG	3	14	12	1511
IGINFUMAVIP	4	27	13	1501
ILEIS	4	23	1	1504
ILUP	2	7	6	1511
IMBIO NO1	2	9	1	1511
IMBIO NO2	2	9	2	1511
IMBIYIP	6	41	3	1507
IMBRINIS	2	9	3	1511
IMNAI NO1	4	23	2	1511
IMNAI NO2	4	23	3	1511
IMONDA	3	10	6	1511
INANTIGIN	4	27	14	1501
INEBU	5	33	3	1507
ISI	2	6	1	1511
ISI NO1	2	7	7	1511
ISI NO2	2	7	8	1511
ISU	3	20	9	1504
ITOMI	3	15	8	1504
IURI 1	3	17	4	1511
IURI 2	3	17	5	1511
IVATIGIN	4	27	15	1501
IVEIG	3	14	13	1511
IVIKMIN-KARENMIN	4	24	7	1501
IVIKMIN-SEPIK	4	24	6	1501
IWANI	5	37	8	1504
KABAINERI	3	14	14	1511
KABORI NO1	5	33	4	1507
KABORI NO2	5	33	5	1507
KAIYE	1	4	11	1507
KAKOI	5	33	6	1507
KALAU	5	34	4	1507
KALEM	6	41	4	1507
KALINGUM	5	33	7	1507
KAMBERATORO	3	13	4	1511
KAMBRIAP	3	17	6	1504
KAMNUM	5	36	5	1507
KAPOAM	1	3	2	1507
KARA/AUSI	1	3	3	1507
KARAITE	1	3	4	1507
KARAITEI	5	34	5	1507
KARAITEM	5	34	6	1507
KARANDU	1	4	12	1507
KARATEI	5	35	5	1507
KARBONI	3	19	5	1504
KAREN	4	26	11	1501
KARENMIN (SEPIK)	4	24	8	1501
KASEIRU	3	20	10	1504
KAWARAMUN	3	16	8	1511
KEIBAM	5	35	6	1507
KEMBIEM	6	43	8	1507
KEMEIMIN	4	24	10	1511
KERNAM	5	36	6	1504

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
KIALIKMAN FERAMIN	4	27	16	1501
KILIPAU	2	7	9	1511
KILIWIS	2	7	10	1511
KIMIASOMIN	4	24	11	1501
KING	6	42	951	1507
KLAPLEI NO1	6	44	4	1507
KLAPLEI NO2	6	44	5	1507
KLAPLEI NO3	6	44	6	1507
KLELBUF	5	35	7	1507
KLIFAS (WARA MAYU)	2	9	4	1511
KOBARARU	3	20	11	1504
KOBRENMIN (FERAMIN)	4	27	19	1501
KOBRENMIN ELIPTAMIN	4	27	18	1501
KOBRENMIN (TELEFOMIN)	4	27	17	1502
KOLOSA	3	10	7	1511
KOMDAVIP	4	27	20	1501
KONABASI	3	16	7	1504
KRISA	2	7	11	1511
KUATIM	5	33	8	1507
KUIVA	4	29	4	1503
KUMASA	3	22	5	1504
KUMNATEI	5	34	7	1507
KUPOAM	5	34	8	1507
KURIPDING	4	25	10	1501
KUSANAP	4	29	5	1510
KUWALVU	6	42	2	1507
KWEK	3	10	8	1511
KWEPTANAP	4	30	5	1503
KWIEFTIM	5	36	7	1504
KWOFINAU	3	14	15	1511
KWOMTARI	3	15	9	1504
KWUMTUM	5	33	9	1507
LABUAIN	1	1	7	1507
LAEKO	6	41	5	1507
LAINGIM NO1	5	39	5	1507
LAINGIM NO2	5	39	6	1507
LALWI	5	38	4	1507
LAMPU	1	3	5	1507
LAU'UM	5	35	8	1507
LEMBANA	4	31	3	1505
LEMIENG	1	1	8	1507
LIBUAT	6	41	6	1507
LIHEN	3	13	5	1511
LILAL	5	38	5	1507
LINGI	5	35	9	1507
LIPOAM-BAIRAP	5	38	6	1507
LUMI	5	35	10	1507
LUPAI	1	3	6	1507
MABUL	5	35	11	1507
MABWAIMIN	4	26	4	1501
MACHENDI	3	10	9	1511
MAFOKA	1	4	13	1507
MAGLERI	5	37	9	1504
MAHANI	3	20	12	1504
MAI	6	40	3	1507
MAIMAI NO1 & 2 & 3	6	41	7	1507
MAIMBEL	5	39	7	1507
MAINDRON (SISSANO)	1	4	14	1507
MAINYA (SISSANO)	1	4	15	1507
MAINYEU (MALOL)	1	4	16	1507
MAIWETEM	5	34	9	1507
MAKAFIM	6	41	8	1507
MALIN	1	1	9	1507
MAMAMURA	3	13	6	1511
MAMBEL	5	38	7	1507
MAMBU	6	43	9	1508
MANGAU	3	13	7	1511
MANGO	3	15	10	1504
MANTOPAI	5	37	10	1504
MANTSUKU	6	44	7	1507
MARAGIN	3	15	11	1504
MARAKUMBA	6	42	3	1507
MARAKWINI	3	19	6	1504
MAROK	1	3	7	1507
MASINERI	3	14	16	1511
MATAPAU	1	1	10	1507
MAUI	5	35	12	1507
MAUROM	5	36	8	1504
MAUWIL	5	33	10	1507
MEREWE	3	16	9	1511
MIHET	1	1	11	1507
MILIOM	5	35	13	1507
MIMBITEI	5	34	10	1507
MINATEI NO1	5	34	11	1507
MINATEI NO2	5	34	12	1507
MINI ABURU	3	18	5	1504
MINK	3	10	11	1511
MISINMIN NO1	4	27	21	1501
MISINMIN NO2	4	27	22	1501
MITAGANAP	4	29	6	1503
MIWAUTEI	5	34	13	1507
MOKAI	5	34	14	1507
MOLMO	5	33	11	1507
MONADIN	6	42	4	1507
MONDUBAN	4	31	4	1505
MONGABIP	4	25	12	1501
MONGO	3	17	7	1511
MONGROVEI	3	13	8	1511
MORI	1	4	17	1507
MOURI	3	14	17	1511
MOWAINERI	3	14	18	1511
MUFUANA	3	15	12	1504
MUKILI	6	41	9	1507
MUKU	6	40	4	1507
MUKVASI	3	20	13	1504
MUMURU	1	4	18	1511
MUNUMBAL	6	40	5	1507
MUP	6	42	952	1507
MUPUN	5	39	8	1507
MUSU	2	5	1	1506
MUSU	5	39	9	1507
MUTUTEIMUN	4	25	11	1501

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
NAGATMAN	3	19	7	1504
NAI NO1	3	16	10	1511
NAI NO2	3	14	19	1511
NAINERI	3	14	20	1511
NAKIL	5	38	8	1507
NAMAUWI	4	24	12	1511
NAMBAINERI	3	14	21	1511
NAMBES	2	8	6	1511
NAMI	5	37	11	1504
NAMOLA	3	10	14	1511
NANGIN	6	42	5	1507
NAREITEI	5	35	14	1507
NAU!ALU	6	45	3	1504
NAUM	5	37	12	1504
NEBIKE	1	4	19	1511
NEBIKE	3	11	5	1511
NENGIAN	1	4	20	1507
NETWOND 1	3	10	12	1511
NETWOND 2	3	10	13	1511
NIMAS (SISSANO)	1	4	21	1507
NIMBERATORO	3	13	9	1511
NINDEBAI	3	13	10	1511
NINGERA	2	6	2	1511
NINGIL	5	39	10	1507
NORAMBALIP	5	37	13	1504
NOWAGE	2	6	3	1511
NUKU	6	44	8	1507
NUNPUFF	2	8	9	1511
NUNSI	5	39	11	1507
OFEKTAMAN	4	27	23	1501
OGRU	3	18	6	1504
OKBILAVIP	4	27	24	1501
OKSIMIN	4	27	25	1501
OMOL	3	10	15	1511
OMULA	2	7	12	1511
ONEI	2	6	4	1511
ORI	6	40	6	1507
ORKWANDA	3	13	11	1511
ORUTEI	5	35	15	1507
OSAL	2	7	14	1511
OSSIMA	2	7	13	1511
OTEI	5	35	16	1507
OTEMGI	5	35	17	1507
OWENIAK	3	14	22	1511
PABEI	5	37	14	1504
PAI	5	34	15	1507
PAIAWA	1	3	8	1507
PANAGGAM	3	17	8	1511
PARISKO	5	36	9	1507
PAUP	1	1	12	1507
PELAMA	5	33	12	1507
PENDESI	3	10	16	1511
PES	1	3	9	1507
PETAINERI NO1	3	14	23	1511
PETAINERI NO2	3	14	24	1511
PIAKO	5	33	13	1507
PIEM	5	38	9	1507
PIEMI	3	15	13	1504
PIGI	2	8	10	1511
PIMON	5	38	10	1507
PINKIL	5	38	11	1507
PINO	2	6	5	1511
PO	1	4	22	1507
POKLO	6	43	10	1508
POPAN	3	10	17	1511
PORO	1	3	10	1507
PRO	1	1	13	1507
PUANG-MESI	5	38	12	1507
PUARI	2	6	6	1511
PUINDU	1	4	23	1507
PULTULUL	1	3	11	1507
PUNDA	3	12	1	1511
PURUMUN	3	16	11	1511
RAINUK	1	4	24	1507
RAMO	1	4	25	1507
RANGWEI	6	41	10	1507
RAUIT	5	39	12	1507
RAUWETEI	5	34	16	1507
RAWEI	3	19	8	1504
RAWO	2	6	7	1511
ROMEI	1	4	9	1507
SABIG	6	40	7	1507
SABIGA	6	43	11	1508
SABTEI	5	35	18	1507
SAINDEI	5	35	19	1507
SAINENDI	3	10	18	1511
SAMANAI	3	18	7	1504
SAMARARU	2	9	5	1511
SARAI	1	4	27	1507
SARBOTEI	5	34	17	1507
SAVAMUI	1	4	26	1511
SEIAWI	3	22	6	1504
SEIMAMIN-TABU	4	24	13	1501
SEINAM	5	35	20	1507
SEIYUM	1	3	13	1507
SELEO ISLAND	1	2	3	1507
SELEPUT	6	44	9	1507
SEMENGLA	6	45	4	1507
SENAGI	3	16	12	1511
SENGI	6	42	6	1507
SENOU	3	22	7	1504
SEPIKIALIKMIN	4	27	26	1501
SEREWANIAMAN	4	24	14	1501
SIAMA	5	33	14	1507
SIAUTE	1	3	12	1507
SIBITEI	5	34	18	1507
SIBITEI	5	35	21	1507
SIBITELA	6	43	12	1507
SIGAITEI	5	34	19	1507
SIKEL	5	39	13	1507
SIKTAMIN	4	27	27	1501
SILIAMBIL	4	28	1	1501
SIMBAP	6	40	8	1507
SIMIA	3	18	8	1504

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
SIMOG	3	10	19	1511
SKOTIAHO	2	8	7	1511
SOGAMIN	4	26	6	1501
SOLOKU NO1	5	39	14	1507
SOLOKU NO2	5	39	15	1507
SOMBOI	2	8	8	1511
SOSI	2	7	15	1511
SOWANDA	3	12	2	1511
SRAM	2	8	11	1511
SUAIN NO1	1	1	14	1507
SUAIN NO2	1	1	15	1507
SUAU	6	42	7	1507
SUGOITE	5	34	20	1507
SULUNUKU	6	43	13	1508
SUMAMBU	6	42	8	1507
SUMO	1	4	28	1507
SUMUMINI	2	9	6	1511
SUNDUN	6	42	9	1507
SUNGTEM	4	30	6	1509
SURIMORTA	6	40	9	1507
SWACHBARU	3	10	20	1511
SWACHKETJIL	3	10	21	1511
SWRAMINAG	3	14	25	1511
TAGATEMTIGIN	4	27	28	1501
TAINIAPIN (MALOL)	1	4	29	1507
TALBIPI	5	35	22	1507
TAMARBEK	3	13	12	1511
TAMINA NO1	3	11	6	1511
TAMINA NO2	3	11	7	1511
TANGEI	5	35	23	1507
TAPOS	2	8	12	1511
TARIS	2	6	8	1511
TAUTEI	5	35	24	1507
TAUWITEI	5	34	21	1507
TAVELDAN	4	28	6	1501
TEBALI	5	35	25	1507
TEKAP	4	29	7	1510
TELEFOLIP	4	27	29	1502
TELES	1	3	14	1507
TELOTEI	5	35	26	1507
TEMSAPMIN	4	26	7	1501
TENGIRAPU	3	17	9	1511
TERA	3	19	9	1504
TERANAP	4	29	8	1503
TERAPDAVIP	4	27	30	1501
TERAUWI	3	17	10	1504
TEREMES	6	41	11	1507
TILA	3	19	10	1504
TIMELMIN AIRSTRIP	4	26	8	1501
TIMENI	5	33	15	1507
TOFUNGU	5	34	22	1507
TOKONENDI	3	10	22	1511
TOLGETI	5	34	23	1507
TOMIANA NO2	4	31	5	1505
TOMIANAP	4	29	9	1510
TOWARE	4	32	1	1510
TUBUM	5	36	10	1507
TUGINARO	6	45	5	1507
TUMENTONIK	5	38	13	1507
TUMLEO ISLAND	1	2	4	1507
TUMOLBIL	4	25	13	1501
TWAITEI	5	35	27	1507
UIAN (MALOL)	1	4	30	1507
ULAP	6	45	6	1507
ULAU NO1	1	1	16	1507
ULAU NO2	1	1	17	1507
UM	3	10	23	1511
UMANAP	4	30	7	1503
UMEDA	3	12	3	1511
UMFOKMIN	4	25	14	1501
UNAMO	4	28	2	1501
UNDU	6	45	7	1507
UNUPAI	3	16	13	1511
URA	4	24	15	1511
URAPMIN	4	24	16	1501
URAPMIN	4	27	31	1501
URUTEI	5	33	16	1507
USAREIMIN	4	26	9	1501
USARI	3	17	11	1504
USITAMO	6	43	14	1507
UTAI	3	15	15	1504
UTEMTIGIN	4	27	32	1501
VANIMO	2	5	2	1506
VEI	6	45	8	1507
VOKHAU	1	1	18	1507
WABIA	4	28	3	1501
WABUF	5	35	28	1507
WABUTEI	5	34	24	1507
WAGOITEI	5	34	25	1507
WAGRONI	3	19	11	1504
WAGU	3	22	8	1504
WAGURINDA	3	13	13	1511
WAHAI	3	13	14	1511
WAI'ELI	5	34	26	1507
WAINA	3	12	4	1511
WAINDA	3	10	24	1511
WAINERI	3	14	26	1511
WAKRANI	3	15	16	1504
WALGON	6	40	10	1507
WALIHIGA	1	1	19	1507
WALWALI	1	4	31	1507
WAMARU	3	14	28	1511
WAMBI	6	42	10	1507
WAMEIMIN NO1	4	26	10	1501
WAMEIMIN NO2	4	28	4	1501
WAMU	3	16	14	1511
WANALI	6	40	11	1507
WANIWOMAKA	6	41	12	1507
WANTIPI	5	34	27	1507
WARA	6	40	12	1507
WARAPU	1	4	32	1507
WARIN	5	38	14	1507
WAROMO	2	5	3	1506
WARUKORI	5	37	15	1504

6.2 RURAL VILLAGES WITH AGRICULTURAL SYSTEM NUMBERS IN ALPHABETICAL ORDER

Province: 15 West Sepik

Village	Dist	Div	Unit	System
WATAPE	3	10	25	1511
WATERSTONE	2	6	9	1506
WAULUP	4	29	10	1510
WAUNINGI	1	3	15	1507
WAURU 1	4	23	4	1504
WAURU NO2	4	23	5	1504
WEIKI	6	40	13	1507
WEITERA	3	19	12	1504
WEKINT	5	39	16	1507
WEMIL	6	41	13	1507
WERANYUWOK	6	42	11	1507
WESEN-WITWAN	5	38	18	1507
WETEILI	5	38	15	1507
WIALA	3	12	5	1511
WIGOTEI	5	34	28	1507
WILBEITEI	5	34	29	1507
WILIUM	5	34	30	1507
WILKILI	5	35	29	1507
WILWIL	6	44	10	1507
WINALUK	5	39	17	1507
WINBE	6	40	14	1507
WITIKIN	5	38	16	1507
WITITAI	5	38	17	1507
WITWEIS	5	38	19	1507
WIUP	5	36	11	1507
WOFNERI	3	14	27	1511
WOGINERI	3	14	29	1511
WOKIEN	5	36	12	1504
WOKOMO	3	21	4	1504
WOLMALOO	6	45	9	1504
WOMBIU	6	41	14	1507
WOMGRIR	6	42	12	1507
WOMSIS	1	1	20	1507
WOSAPOM	6	45	10	1507
WOWIL	6	40	15	1507
WUBLAGIL	5	39	18	1507
WUGUBLI	5	34	31	1507
WULBOWE	6	45	11	1507
WULUKUM	5	39	19	1507
WUMERAU	6	42	13	1507
WURO	6	40	16	1507
WURUBAI	3	15	14	1507
WUTUNG	2	5	4	1506
YADAGARO	6	42	14	1507
YAFTIMBI	3	15	18	1504
YAKALTIM	5	37	16	1504
YAKAMUL NO1	1	1	21	1507
YAKAMUL NO2	1	1	22	1507
YAKO	2	5	5	1506
YAKOI (MAINLAND)	1	2	5	1507
YAMAMINDA	3	13	15	1511
YAMBIL	6	40	17	1507
YAMEGIL	6	42	15	1507
YAMOUM	5	38	23	1507
YANGKOK	5	39	20	1507
YANUGEN	6	42	19	1507
YARU	5	37	18	1504
YAUAN	6	42	17	1507
YAUKONO	2	8	13	1511
YAUURI	3	15	17	1504
YAUWA	6	45	12	1507
YAWA	5	37	19	1504
YAWARI	5	37	17	1504
YEBIL	5	33	17	1507
YEGARAPI	5	37	20	1504
YEKILO	5	36	13	1504
YEMEREBA	6	41	15	1507
YEMLU	5	39	21	1507
YEMNU	5	38	20	1507
YENABI	3	15	19	1504
YERISI	6	40	18	1507
YILI	5	38	21	1507
YILIWAMBIL	6	42	18	1507
YILUI	5	37	21	1504
YIMAUWI	6	45	13	1507
YIMIN	6	45	14	1504
YIMINUM	6	44	11	1507
YIMUT	6	45	15	1507
YIRIWANDI	6	43	15	1508
YIRKIN	6	40	19	1507
YO	2	9	7	1511
YOKAMA	5	33	18	1507
YONGITE	1	3	16	1507
YONGITEI	5	34	32	1507
YOULPA	6	40	20	1507
YUGUBIL	4	25	15	1501
YULEM	6	41	16	1507
YUMOR NO1	3	14	30	1511
YUMOR NO2	3	14	31	1511
YUPUNDA	6	42	16	1507
YUTABI	5	38	22	1507
YUWETLA	3	10	26	1511
YUWIL	5	39	22	1507

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM **Province: 15 West Sepik**

Village	Dist	Div	Unit	RMU
SYSTEM 1501				
ABUNGKAMIN	4	27	1	277
AFOGAVIP	4	27	2	277
AGAMTAVIP	4	27	3	276
AMAROMIN	4	26	1	236
ATEMTKIAKMIN	4	27	5	295
BAKADING	4	25	1	278
BILKA	4	25	2	218
BILTAVIP	4	27	6	277
BITAPENA	4	24	2	218
BOFULMIN-TIFALMIN C.	4	27	7	293
BOLVIL	4	27	9	277
BONKEMBIL	4	25	3	282
BOVRIPMIN	4	26	2	219
BRUNEIOK	4	25	4	278
BUSILMIN	4	25	5	285
DEFAKBIL	4	25	6	278
EGIBUNA	4	24	4	218
FAMUKMIN FERAMIN C.S	4	27	11	296
FIAMOK	4	25	7	245
FRIEDA BASE CAMP	4	28	951	248
FUIARIMIN	4	26	3	236
FUMENAVIP	4	28	5	223
FUNGAL	4	25	8	278
FUTIPMIN	4	24	17	218
IAMDELMIN	4	25	9	278
IBORIO	4	24	5	218
IGINFUMAVIP	4	27	13	295
INANTIGIN	4	27	14	194
IVATIGIN	4	27	15	194
IVIKMIN-KARENMIN	4	24	7	218
IVIKMIN-SEPIK	4	24	6	218
KAREN	4	26	11	219
KARENMIN (SEPIK)	4	24	8	278
KIALIKMAN FERAMIN	4	27	16	296
KIMIASOMIN	4	24	11	219
KOBRENMIN (FERAMIN)	4	27	19	296
KOBRENMIN ELIPTAMIN	4	27	18	277
KOMDAVIP	4	27	20	277
KURIPDING	4	25	10	282
MABWAIMIN	4	26	4	236
MISINMIN NO1	4	27	21	295
MISINMIN NO2	4	27	22	277
MONGABIP	4	25	12	283
MUTUTEIMUN	4	25	11	278
OFEKTAMAN	4	27	23	194
OKBILAVIP	4	27	24	294
OKSIMIN	4	27	25	296
SEIMAMIN-TABU	4	24	13	218
SEPIKIALIKMIN	4	27	26	194
SEREWANIAMAN	4	24	14	218
SIKTAMIN	4	27	27	194
SILIAMBIL	4	28	1	269
SOGAMIN	4	26	6	219
TAGATEMTIGIN	4	27	28	276
TAVELDAN	4	28	6	269
TEMSAPMIN	4	26	7	278
TERAPDAVIP	4	27	30	277
TIMELMIN AIRSTRIP	4	26	8	278
TUMOLBIL	4	25	13	278
UMFOKMIN	4	25	14	278
UNAMO	4	28	2	244
URAPMIN	4	24	16	219
URAPMIN	4	27	31	295
USAREIMIN	4	26	9	278
UTEMTIGIN	4	27	32	277
WABIA	4	28	3	264
WAMEIMIN NO1	4	26	10	219
WAMEIMIN NO2	4	28	4	241
YUGUBIL	4	25	15	278
SYSTEM 1502				
ANKAVIP-KIALIKMAN	4	27	4	295
BOGALMIN	4	27	8	295
DROLENGAM	4	27	10	295
FERAMTIGIN	4	27	12	295
KOBRENMIN(TELEFOMIN)	4	27	17	318
TELEFOLIP	4	27	29	295
SYSTEM 1503				
BETIANAP	4	29	2	315
DABURAP	4	30	2	311
DUBAN	4	30	3	310
GAUA	4	30	4	313
GOBI	4	31	2	275
KUIVA	4	29	4	300
KWEPTANAP	4	30	5	311
MITAGANAP	4	29	6	315
TERANAP	4	29	8	314
UMANAP	4	30	7	316
SYSTEM 1504				
ABARU	3	18	1	198
ABRAU	5	37	1	156
AKWOM	5	37	3	171
ALAI	5	37	5	171
ALENDAMI	5	37	2	171
AMENI	5	37	6	200
AMINI	3	18	2	171
AMTO	3	22	1	205
AUGOM	5	37	4	200
AUIA NO1	3	17	1	171
AUIA NO2	3	17	2	196
AUYA	3	19	1	172
BAIBAI	3	15	2	180
BAIBERI	3	15	3	180
BAIO	3	20	1	200
BAIUWAI	3	20	2	200
BEIMAP	3	22	2	200
BEL	6	45	1	148
BIAKE NO1	3	20	3	200
BIAKE NO2	3	20	4	172
BIFRO	3	20	5	200
BISIABRU	3	21	1	208
BUGIAME	3	22	3	205
BUNA	3	20	6	200
BUSA	3	19	2	171
DIERU	3	18	3	171
DILA	3	19	3	170
EKAS	3	15	4	178

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM

Province: 15 West Sepik

Village	Dist	Div	Unit	RMU
FARU	3	22	4	205
FAS NO3	3	15	5	180
FINAMOI	3	15	6	340
GILIATO	5	36	3	161
GURIASO	3	15	7	180
GWIDAMI	5	37	7	171
HILA	3	19	4	169
HUFI	3	20	7	200
IABARU	3	20	8	200
IBURU	3	18	4	171
IDAM 1	3	21	2	200
IDAM 2	3	21	3	208
ILEIS	4	23	1	324
ISU	3	20	9	200
ITOMI	3	15	8	180
IWANI	5	37	8	159
KAMBRIAP	3	17	6	196
KARBONI	3	19	5	180
KASEIRU	3	20	10	200
KERNAM	5	36	6	161
KOBARARU	3	20	11	200
KONABASI	3	16	7	190
KUMASA	3	22	5	205
KWIEFTIM	5	36	7	343
KWOMTARI	3	15	9	180
MAGLERI	5	37	9	148
MAHANI	3	20	12	200
MANGO	3	15	10	180
MANTOPAI	5	37	10	171
MARAGIN	3	15	11	176
MARAKWINI	3	19	6	180
MAUROM	5	36	8	161
MINI ABURU	3	18	5	197
MUFUANA	3	15	12	180
MUKVASI	3	20	13	200
NAGATMAN	3	19	7	180
NAMI	5	37	11	171
NAU!ALU	6	45	3	148
NAUM	5	37	12	171
NORAMBALIP	5	37	13	157
OGRU	3	18	6	171
PABEI	5	37	14	171
PIEMI	3	15	13	180
RAWEI	3	19	8	172
SAMANAI	3	18	7	171
SEIAWI	3	22	6	205
SENOU	3	22	7	200
SIMIA	3	18	8	171
TERA	3	19	9	180
TERAUWI	3	17	10	196
TILA	3	19	10	171
USARI	3	17	11	171
UTAI	3	15	15	178
WAGRONI	3	19	11	180
WAGU	3	22	8	200
WAKRANI	3	15	16	180
WARUKORI	5	37	15	171
WAURU 1	4	23	4	208
WAURU NO2	4	23	5	208
WEITERA	3	19	12	169
WOKIEN	5	36	12	161
WOKOMO	3	21	4	217
WOLMALOO	6	45	9	143
YAFTIMBI	3	15	18	180
YAKALTIM	5	37	16	171
YARU	5	37	18	157
YAUURI	3	15	17	180
YAWA	5	37	19	148
YAWARI	5	37	17	171
YEGARAPI	5	37	20	157
YEKILO	5	36	13	161
YENABI	3	15	19	180
YILUI	5	37	21	148
YIMIN	6	45	14	148
SYSTEM 1505				
AKIAPMIN	4	31	1	267
LEMBANA	4	31	3	275
MONDUBAN	4	31	4	267
TOMIANA NO2	4	31	5	275
SYSTEM 1506				
MUSU	2	5	1	2
VANIMO	2	5	2	8
WAROMO	2	5	3	8
WATERSTONE	2	6	9	11
WUTUNG	2	5	4	1
YAKO	2	5	5	8
SYSTEM 1507				
AFUA	1	1	1	107
AIAMINA	3	15	1	163
AIMUKILI	6	41	1	137
AINDRIN	1	4	1	96
AIPOKON	1	4	2	96
AITERAP	1	3	1	81
ALI	5	35	1	126
ALI ISLAND	1	2	1	101
ALKULA	5	33	1	354
AMAITEM	5	34	1	127
AMSOR	1	4	3	95
AMSOR (SISSANO)	1	4	4	51
AMSUKU	1	4	5	57
ANGEL ISLAND	1	2	2	101
AROP NO1	1	4	6	330
AROP NO2	1	4	7	330
ASAPAS	1	1	2	122
ASIER	6	42	1	125
AUANG	5	39	2	127
AUGUGANAK	5	39	1	126
BALUP	1	1	3	113
BARIRA	1	4	8	92
BIN	5	35	2	163
BINARA	6	40	1	321
BOGASIP	5	39	3	126
BOINI	6	40	2	126
BRUGAP	5	39	4	126
BULAWA	5	36	1	138
BURU'UM	5	35	3	126
CHAROK	1	1	4	108

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM **Province: 15 West Sepik**

Village	Dist	Div	Unit	RMU
CHINAPELLI	1	1	5	105
DEIA	1	1	6	124
EIKIL-YAMOUM	5	38	2	127
ENGIEP	6	41	2	138
ERETEI NO1	5	34	2	127
ERETEI NO2	5	35	4	127
FLOBUM	5	34	3	127
GALGATU	5	36	2	163
GAMO	6	45	2	139
GARA	5	33	2	68
GOINIRI	1	4	10	91
GUTAIYA	5	36	4	163
HAMBASAMBA	6	43	7	132
HAPSEIM	5	38	3	127
IFKINDU	6	44	3	138
IMBIYIP	6	41	3	138
INEBU	5	33	3	354
KABORI NO1	5	33	4	77
KABORI NO2	5	33	5	77
KAIYE	1	4	11	76
KAKOI	5	33	6	163
KALAU	5	34	4	
KALEM	6	41	4	138
KALINGUM	5	33	7	163
KAMNUM	5	36	5	163
KAPOAM	1	3	2	104
KARA/AUSI	1	3	3	104
KARAITE	1	3	4	88
KARAITEI	5	34	5	126
KARAITEM	5	34	6	127
KARANDU	1	4	12	76
KARATEI	5	35	5	126
KEIBAM	5	35	6	163
KEMBIEM	6	43	8	132
KING	6	42	951	125
KLAPLEI NO1	6	44	4	138
KLAPLEI NO2	6	44	5	138
KLAPLEI NO3	6	44	6	138
KLELBUF	5	35	7	163
KUATIM	5	33	8	163
KUMNATEI	5	34	7	127
KUPOAM	5	34	8	127
KUWALVU	6	42	2	321
KWUMTUM	5	33	9	163
LABUAIN	1	1	7	122
LAEKO	6	41	5	137
LAINGIM NO1	5	39	5	127
LAINGIM NO2	5	39	6	126
LALWI	5	38	4	126
LAMPU	1	3	5	96
LAU'UM	5	35	8	163
LEMIENG	1	1	8	99
LIBUAT	6	41	6	138
LILAL	5	38	5	127
LINGI	5	35	9	126
LIPOAM-BAIRAP	5	38	6	163
LUMI	5	35	10	126
LUPAI	1	3	6	88
MABUL	5	35	11	126
MAFOKA	1	4	13	50
MAI	6	40	3	126
MAIMAI NO1 & 2 & 3	6	41	7	137
MAIMBEL	5	39	7	131
MAINDRON (SISSANO)	1	4	14	51
MAINYA (SISSANO)	1	4	15	51
MAINYEU (MALOL)	1	4	16	95
MAIWETEM	5	34	9	127
MAKAFIM	6	41	8	137
MALIN	1	1	9	115
MAMBEL	5	38	7	126
MANTSUKU	6	44	7	138
MARAKUMBA	6	42	3	125
MAROK	1	3	7	92
MATAPAU	1	1	10	114
MAUI	5	35	12	163
MAUWIL	5	33	10	163
MIHET	1	1	11	119
MILIOM	5	35	13	126
MIMBITEI	5	34	10	126
MINATEI NO1	5	34	11	127
MINATEI NO2	5	34	12	127
MIWAUTEI	5	34	13	127
MOKAI	5	34	14	354
MOLMO	5	33	11	68
MONADIN	6	42	4	125
MORI	1	4	17	50
MUKILI	6	41	9	138
MUKU	6	40	4	127
MUNUMBAL	6	40	5	321
MUP	6	42	952	120
MUPUN	5	39	8	126
MUSU	5	39	9	126
NAKIL	5	38	8	163
NANGIN	6	42	5	125
NAREITEI	5	35	14	126
NENGIAN	1	4	20	90
NIMAS (SISSANO)	1	4	21	51
NINGIL	5	39	10	126
NUKU	6	44	8	132
NUNSI	5	39	11	127
ORI	6	40	6	126
ORUTEI	5	35	15	163
OTEI	5	35	16	126
OTEMGI	5	35	17	163
PAI	5	34	15	127
PAIAWA	1	3	8	104
PARISKO	5	36	9	163
PAUP	1	1	12	99
PELAMA	5	33	12	163
PES	1	3	9	92
PIAKO	5	33	13	68
PIEM	5	38	9	126
PIMON	5	38	10	126
PINKIL	5	38	11	163
PO	1	4	22	54
PORO	1	3	10	92
PRO	1	1	13	99
PUANG-MESI	5	38	12	126
PUINDU	1	4	23	51
PULTULUL	1	3	11	98

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM **Province: 15 West Sepik**

Village	Dist	Div	Unit	RMU
RAINUK	1	4	24	51
RAMO	1	4	25	50
RANGWEI	6	41	10	138
RAUIT	5	39	12	126
RAUWETEI	5	34	16	127
ROMEI	1	4	9	92
SABIG	6	40	7	131
SABTEI	5	35	18	126
SAINDEI	5	35	19	126
SARAI	1	4	27	51
SARBOTEI	5	34	17	127
SEINAM	5	35	20	163
SEIYUM	1	3	13	88
SELEO ISLAND	1	2	3	101
SELEPUT	6	44	9	132
SEMENGLA	6	45	4	141
SENGI	6	42	6	125
SIAMA	5	33	14	354
SIAUTE	1	3	12	88
SIBITEI	5	34	18	127
SIBITEI	5	35	21	126
SIBITELA	6	43	12	132
SIGAITEI	5	34	19	127
SIKEL	5	39	13	127
SIMBAP	6	40	8	131
SOLOKU NO1	5	39	14	127
SOLOKU NO2	5	39	15	127
SUAIN NO1	1	1	14	327
SUAIN NO2	1	1	15	124
SUAU	6	42	7	135
SUGOITE	5	34	20	127
SUMAMBU	6	42	8	125
SUMO	1	4	28	50
SUNDUN	6	42	9	125
SURIMORTA	6	40	9	126
TAINIAPIN (MALOL)	1	4	29	95
TALBIPI	5	35	22	163
TANGEI	5	35	23	126
TAUTEI	5	35	24	163
TAUWITEI	5	34	21	126
TEBALI	5	35	25	163
TELES	1	3	14	96
TELOTEI	5	35	26	126
TEREMES	6	41	11	138
TIMENI	5	33	15	163
TOFUNGU	5	34	22	127
TOLGETI	5	34	23	127
TUBUM	5	36	10	163
TUGINARO	6	45	5	138
TUMENTONIK	5	38	13	126
TUMLEO ISLAND	1	2	4	100
TWAITEI	5	35	27	126
UIAN (MALOL)	1	4	30	95
ULAP	6	45	6	141
ULAU NO1	1	1	16	124
ULAU NO2	1	1	17	124
UNDU	6	45	7	139
URUTEI	5	33	16	126
USITAMO	6	43	14	132
VEI	6	45	8	139
VOKHAU	1	1	18	99
WABUF	5	35	28	163
WABUTEI	5	34	24	127
WAGOITEI	5	34	25	127
WAI'ELI	5	34	26	127
WALGON	6	40	10	126
WALIHIGA	1	1	19	122
WALWALI	1	4	31	92
WAMBI	6	42	10	125
WANALI	6	40	11	321
WANIWOMAKA	6	41	12	137
WANTIPI	5	34	27	354
WARA	6	40	12	126
WARAPU	1	4	32	51
WARIN	5	38	14	163
WAUNINGI	1	3	15	88
WEIKI	6	40	13	126
WEKINT	5	39	16	127
WEMIL	6	41	13	131
WERANYUWOK	6	42	11	321
WESEN-WITWAN	5	38	18	163
WETEILI	5	38	15	163
WIGOTEI	5	34	28	127
WILBEITEI	5	34	29	127
WILIUM	5	34	30	127
WILKILI	5	35	29	163
WILWIL	6	44	10	138
WINALUK	5	39	17	126
WINBE	6	40	14	127
WITIKIN	5	38	16	163
WITITAI	5	38	17	163
WITWEIS	5	38	19	163
WIUP	5	36	11	163
WOMBIU	6	41	14	138
WOMGRIR	6	42	12	135
WOMSIS	1	1	20	122
WOSAPOM	6	45	10	138
WOWIL	6	40	15	127
WUBLAGIL	5	39	18	126
WUGUBLI	5	34	31	354
WULBOWE	6	45	11	139
WULUKUM	5	39	19	126
WUMERAU	6	42	13	125
WURO	6	40	16	126
WURUBAI	3	15	14	163
YADAGARO	6	42	14	125
YAKAMUL NO1	1	1	21	105
YAKAMUL NO2	1	1	22	105
YAKOI (MAINLAND)	1	2	5	98
YAMBIL	6	40	17	128
YAMEGIL	6	42	15	125
YAMOUM	5	38	23	127
YANGKOK	5	39	20	126
YANUGEN	6	42	19	125
YAUAN	6	42	17	125
YAUWA	6	45	12	138
YEBIL	5	33	17	163
YEMEREBA	6	41	15	138
YEMLU	5	39	21	126
YEMNU	5	38	20	126

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM **Province: 15 West Sepik**

Village	Dist	Div	Unit	RMU
YERISI	6	40	18	131
YILI	5	38	21	126
YILIWAMBIL	6	42	18	321
YIMAUWI	6	45	13	152
YIMINUM	6	44	11	132
YIMUT	6	45	15	139
YIRKIN	6	40	19	128
YOKAMA	5	33	18	163
YONGITE	1	3	16	88
YONGITEI	5	34	32	127
YOULPA	6	40	20	126
YULEM	6	41	16	138
YUPUNDA	6	42	16	128
YUTABI	5	38	22	163
YUWIL	5	39	22	126
SYSTEM 1508				
ABIGU	6	43	1	132
AKOSAMEI NO1	6	44	1	139
AKOSAMEI NO2	6	44	2	139
ANGRA	6	43	2	132
APDUWANO	6	43	3	132
ATERUM	6	43	4	132
AWES	6	43	5	132
HAMBANGRI	6	43	6	132
MAMBU	6	43	9	132
POKLO	6	43	10	132
SABIGA	6	43	11	132
SULUNUKU	6	43	13	132
YIRIWANDI	6	43	15	132
SYSTEM 1509				
BIMIN	4	30	1	303
SUNGTEM	4	30	6	305
SYSTEM 1510				
ARANIMAP	4	29	1	315
DIVANAP	4	29	3	315
KUSANAP	4	29	5	315
TEKAP	4	29	7	315
TOMIANAP	4	29	9	315
TOWARE	4	32	1	244
WAULUP	4	29	10	300
SYSTEM 1511				
AHERI	3	14	1	185
AINBAI	2	8	1	79
AIRU	2	7	1	80
AIYAWOU	2	7	2	15
AKIMARI NO1	3	13	1	185
AKIMARI NO2	3	13	2	185
AKRAMINAG	3	14	2	185
AKRANI	3	16	1	190
AMANDAN	3	16	2	187
AMOI	2	8	2	25
APWAMBO	2	8	3	25
AULI	2	7	3	15
AURUMP	3	14	3	185
AWOL	2	7	4	80
BAITA	4	24	1	217
BAMBOL	3	13	3	185
BANANAG	3	14	4	187
BARIBARI	3	16	3	190
BIAKA	3	16	4	190
BIBRIARI	3	16	5	190
BIPAN	3	14	5	185
BOITATEMA	4	24	3	324
DADNDA	3	10	1	181
DAUCHENDI	3	10	2	183
DAUNDI	3	10	3	182
DOPONENDI	3	10	4	183
EINOKNERI	3	14	6	185
ELAU	2	7	5	27
ELIS	2	8	4	80
EPMI 1	3	10	5	185
FAS NO1	3	11	1	67
FAS NO2	3	11	2	67
FONGWINAM	3	17	3	190
FUGERI	3	11	3	67
FUGUMUI	3	11	4	60
IAFAR NO1	3	14	7	185
IAFAR NO2	3	14	8	185
IAFAR NO3	3	14	9	185
IBAGUM	3	14	10	185
IDOLI	2	8	5	25
IFIGERI	3	14	11	185
IFRAMINAG	3	14	12	185
ILUP	2	7	6	26
IMBIO NO1	2	9	1	40
IMBIO NO2	2	9	2	41
IMBRINIS	2	9	3	78
IMNAI NO1	4	23	2	218
IMNAI NO2	4	23	3	324
IMONDA	3	10	6	185
ISI	2	6	1	55
ISI NO1	2	7	7	26
ISI NO2	2	7	8	80
IURI 1	3	17	4	191
IURI 2	3	17	5	191
IVEIG	3	14	13	185
KABAINERI	3	14	14	187
KAMBERATORO	3	13	4	187
KAWARAMUN	3	16	8	187
KEMEIMIN	4	24	10	216
KILIPAU	2	7	9	16
KILIWIS	2	7	10	16
KLIFAS (WARA MAYU)	2	9	4	79
KOLOSA	3	10	7	183
KRISA	2	7	11	5
KWEK	3	10	8	182
KWOFINAU	3	14	15	187
LIHEN	3	13	5	187
MACHENDI	3	10	9	183
MAMAMURA	3	13	6	190
MANGAU	3	13	7	185
MASINERI	3	14	16	193
MEREWE	3	16	9	190
MINK	3	10	11	182
MONGO	3	17	7	188
MONGROVEI	3	13	8	190

6.3 RURAL VILLAGES LISTED BY AGRICULTURAL SYSTEM **Province: 15 West Sepik**

Village	Dist	Div	Unit	RMU
MOURI	3	14	17	185
MOWAINERI	3	14	18	185
MUMURU	1	4	18	57
NAI NO1	3	16	10	187
NAI NO2	3	14	19	193
NAINERI	3	14	20	185
NAMAUWI	4	24	12	216
NAMBAINERI	3	14	21	185
NAMBES	2	8	6	25
NAMOLA	3	10	14	183
NEBIKE	1	4	19	57
NEBIKE	3	11	5	67
NETWOND 1	3	10	12	183
NETWOND 2	3	10	13	183
NIMBERATORO	3	13	9	187
NINDEBAI	3	13	10	190
NINGERA	2	6	2	40
NOWAGE	2	6	3	48
NUNPUFF	2	8	9	24
OMOL	3	10	15	183
OMULA	2	7	12	80
ONEI	2	6	4	49
ORKWANDA	3	13	11	190
OSAL	2	7	14	15
OSSIMA	2	7	13	80
OWENIAK	3	14	22	193
PANAGGAM	3	17	8	188
PENDESI	3	10	16	183
PETAINERI NO1	3	14	23	185
PETAINERI NO2	3	14	24	185
PIGI	2	8	10	24
PINO	2	6	5	55
POPAN	3	10	17	182
PUARI	2	6	6	48
PUNDA	3	12	1	185
PURUMUN	3	16	11	187
RAWO	2	6	7	56
SAINENDI	3	10	18	183
SAMARARU	2	9	5	40
SAVAMUI	1	4	26	50
SENAGI	3	16	12	190
SIMOG	3	10	19	179
SKOTIAHO	2	8	7	24
SOMBOI	2	8	8	25
SOSI	2	7	15	5
SOWANDA	3	12	2	185
SRAM	2	8	11	24
SUMUMINI	2	9	6	79
SWACHBARU	3	10	20	183
SWACHKETJIL	3	10	21	183
SWRAMINAG	3	14	25	187
TAMARBEK	3	13	12	185
TAMINA NO1	3	11	6	67
TAMINA NO2	3	11	7	68
TAPOS	2	8	12	23
TARIS	2	6	8	48
TENGIRAPU	3	17	9	188
TOKONENDI	3	10	22	183
UM	3	10	23	183
UMEDA	3	12	3	185
UNUPAI	3	16	13	190
URA	4	24	15	216
WAGURINDA	3	13	13	187
WAHAI	3	13	14	187
WAINA	3	12	4	185
WAINDA	3	10	24	183
WAINERI	3	14	26	187
WAMARU	3	14	28	185
WAMU	3	16	14	187
WATAPE	3	10	25	179
WIALA	3	12	5	185
WOFNERI	3	14	27	185
WOGINERI	3	14	29	185
YAMAMINDA	3	13	15	190
YAUKONO	2	8	13	4
YO	2	9	7	41
YUMOR NO1	3	14	30	185
YUMOR NO2	3	14	31	185
YUWETLA	3	10	26	182

APPENDIX A.1

NATIONAL POPULATION CENSUS PROVINCIAL CODES

Province	Abbreviation	Code
Western	WES	01
Gulf	GUL	02
Central	CEN	03
National Capital District	NCD	04
Milne Bay	MBP	05
Oro (Northern)	ORO	06
Southern Highlands	SHP	07
Enga	ENG	08
Western Highlands	WHP	09
Simbu (Chimbu)	SIM	10
Eastern Highlands	EHP	11
Morobe	MOR	12
Madang	MAD	13
East Sepik	ESP	14
West Sepik (Sandaun)	WSP	15
Manus	MAN	16
New Ireland	NIP	17
East New Britain	ENB	18
West New Britain	WNB	19
Bougainville	NSP	20

APPENDIX A.2

NATIONAL POPULATION CENSUS CODES FOR DISTRICTS AND CENSUS DIVISIONS, WEST SEPIK PROVINCE[1]

Code	Division
01	**AITAPE DISTRICT**
01	BATAI
02	AITAPE ISLANDS
03	SIAU
04	SISSANO
02	**VANIMO DISTRICT**
05	VANIMO WEST COAST
06	VANIMO EAST COAST
07	KILIMERI
09	IMBIO
03	**AMANAB DISTRICT**
10	IMONDA LOCAL
11	BEMBI
12	WAINA SOWANDA
13	DERA
14	AMANAB LOCAL
15	KWOMTARI
16	NAI FARINGI
17	IURI
18	GREEN RIVER LOCAL
19	NAGU
20	YABALHAI
21	IDAM
22	ROCKY PEAK
04	**TELEFOMIN DISTRICT**
23	YAPSEI LOCAL
24	WEST MIANMIN
25	ATBALMIN
26	EAST MIANMIN
27	TELEFOMIN LOCAL
28	NENATAMAN
29	TERANAP-TEKIN
30	BAK-BIMIN
31	OM RIVER
32	UPPER LEONARD SCHULTZE
05	**LUMI DISTRICT**
33	WEST WAPEI
34	SOMORO
35	LUMI LOCAL
36	SOUTH WEST WAPEI
37	SOUTH WAPEI
38	WEST AU
39	EAST AU
06	**NUKU DISTRICT**
40	WEST PALEI
41	MAI MAI NAMBLO
42	EAST PALEI
43	SEIM
44	MAKRU KLAPLEI
45	WAN WAN

[1] The Census Division names and codes are from the 1980 National Population Census. However, because the district definitions in some provinces changed between the 1980 and 1990 censuses, and because districts are important for provincial administrative purposes, the district names and codes are from the 1990 National Population Census. Some provinces have further changed district definitions since 1990 but these are not shown.

Agricultural Systems of Papua New Guinea Working Papers

1. Bourke, R.M., B.J. Allen, P. Hobsbawn and J. Conway (1998) Papua New Guinea: Text Summaries (two volumes).
2. Allen, B.J., R.L. Hide, R.M. Bourke, D. Fritsch, R. Grau, E. Lowes, T. Nen, E. Nirsie, J. Risimeri and M. Woruba (2002) East Sepik Province: Text Summaries, Maps, Code Lists and Village Identification.
3. Bourke, R.M., B.J. Allen, R.L. Hide, D. Fritsch, R. Grau, E. Lowes, T. Nen, E. Nirsie, J. Risimeri and M. Woruba (2002) West Sepik Province: Text Summaries, Maps, Code Lists and Village Identification.
4. Allen, B.J., R.L. Hide, R.M. Bourke, W. Akus, D. Fritsch, R. Grau, G. Ling and E. Lowes (2002) Western Province: Text Summaries, Maps, Code Lists and Village Identification.
5. Hide, R.L., R.M. Bourke, B.J. Allen, N. Fereday, D. Fritsch, R. Grau, E. Lowes and M. Woruba (2002) Gulf Province: Text Summaries, Maps, Code Lists and Village Identification.
6. Hide, R.L., R.M. Bourke, B.J. Allen, T. Betitis, D. Fritsch, R. Grau, L. Kurika, E. Lowes, D.K. Mitchell, S.S. Rangai, M. Sakiasi, G. Sem and B. Suma (2002) Milne Bay Province: Text Summaries, Maps, Code Lists and Village Identification.
7. Allen, B.J., R.L. Hide, R.M. Bourke, D. Fritsch, R. Grau, P. Hobsbawn, M.P. Levett, I.S. Majnep, V. Mangai, T. Nen and G. Sem (2002) Madang Province: Text Summaries, Maps, Code Lists and Village Identification.
8. Bourke R.M., B.J. Allen, R.L. Hide, D. Fritsch, R. Grau, P. Hobsbawn, E. Lowes and D. Stannard (2002) Eastern Highlands Province: Text Summaries, Maps, Code Lists and Village Identification.
9. Allen, B.J., R.L. Hide, R.M. Bourke, C. Ballard, D. Fritsch, R. Grau, P. Hobsbawn, G.S. Humphreys and D. Kandasan (2002) Enga Province: Text Summaries, Maps, Code Lists and Village Identification.
10. Hide, R.L., R.M. Bourke, B.J. Allen, D. Fritsch, R. Grau, P. Hobsbawn and S. Lyon (2002) Western Highlands Province: Text Summaries, Maps, Code Lists and Village Identification.
11. Bourke, R.M., B.J. Allen, R.L. Hide, D. Fritsch, R. Grau, P. Hobsbawn, B. Konabe, M.P. Levett, S. Lyon and A. Varvaliu (2002) Southern Highlands Province: Text Summaries, Maps, Code Lists and Village Identification.
12. Hide, R.L., R.M. Bourke, B.J. Allen, D. Fritsch, R. Grau, P. Hobsbawn and S. Lyon (2002) Chimbu Province: Text Summaries, Maps, Code Lists and Village Identification.
13. Bourke, R.M., R.L. Hide, B.J. Allen, D. Fritsch, R. Grau, P. Hobsbawn, M. Levett, S. Lyon, L. Nama and T. Nen (2002) West New Britain Province: Text Summaries, Maps,Code Lists and Village Identification.
14. Bourke, R.M., B.J. Allen, R.L. Hide, D. Fritsch, T. Geob, R. Grau, S. Heai, P. Hobsbawn, G. Ling, S. Lyon and M. Poienou (2002) East New Britain Province: Text Summaries, Maps,Code Lists and Village Identification.
15. Allen, B.J., T. Nen, R.M. Bourke, R.L. Hide, D. Fritsch, R. Grau, P. Hobsbawn and S. Lyon (2002) Central Province: Text Summaries, Maps,Code Lists and Village Identification.
16. Allen, B.J., T. Nen, R.L. Hide, R.M. Bourke, D. Fritsch, R. Grau, P. Hobsbawn, S. Lyon and G. Sem (2002) Northern Province: Text Summaries, Maps, Code Lists and Village Identification.
17. Hide, R.L., R.M. Bourke, B.J. Allen, W. Akus, D. Frisch, R. Grau, P. Hobsbawn, P. Igua, R. Kameata, S. Lyon and N. Miskaram (2002) New Ireland Province: Text Summaries, Maps, Code Lists and Village Identification.
18. Hide, R.L., B.J. Allen, R.M. Bourke, D. Frisch, R. Grau, J.L. Helepet, P. Hobsbawn, S. Lyon, M. Poienou, S. Pondrilei, K. Pouru, G. Sem and B. Tewi (2002) Manus Province: Text Summaries, Maps, Code Lists and Village Identification.
19. Bourke, R.M., B.J. Allen, R.L. Hide, N. Fereday, D. Fritsch, B. Gaupu, R. Grau, P. Hobsbawn, M.P. Levett, S. Lyon, V. Mangi and G. Sem (2002) Morobe Province: Text Summaries, Maps, Code Lists and Village Identification.
20. Bourke, R.M., M. Woruba, B.J. Allen, M. Allen, R. Grau and P. Hobsbawn (2002) Bougainville Province: Text Summaries, Maps, Code Lists and Village Identification.
21. Hobsbawn, P., D. Fritsch, R. Grau, B.J. Allen, R.L. Hide and R.M. Bourke (1997) Technical Information and Methods.
22. Hobsbawn, P. and J. Conway (1998) Bibliography.
23. Stuckings, N.E., R.L. Hide, R.M. Bourke, B.J. Allen, P. Hobsbawn and J. Conway (1997) Papua New Guinea Agriculture Literature Database.

For further information:
Land Management Group
Department of Human Geography
Research School of Pacific and Asian Studies
Australian National University
Canberra ACT 0200
Australia
Phone:+ 61 2 6125 2246
Fax: + 61 2 6125 4896
E-mail: lmg@coombs.anu.edu.au