



**CARIBBEAN NATURAL RESOURCES INSTITUTE
(CANARI)**

**CHARACTERIZATION OF AT-RISK POPULATIONS
IN THE PENCAR WATERSHED AND EXISTING
AND POTENTIAL BENEFITS FROM FOREST
RESOURCE USE**

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CHARACTERIZATION OF AT-RISK POPULATIONS IN THE PENCAR WATERSHED AND EXISTING AND POTENTIAL BENEFITS FROM FOREST RESOURCE USE

Winston Mills, Agronomist
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Executive Summary

1. The study was carried out as part of a larger research project on community participation in the development of Local Forest Management Committees in the Buff Bay-Pencar watershed. The purpose of the study was to characterize those portions of the population of the Pencar watershed living in or at risk of falling into poverty, and to identify avenues through which forest resources could improve their livelihoods.
2. The study was carried out between July and November 2001, using participatory learning and action techniques. A large sample of the communities in both the Pencar River and Dry River portions of the watershed was surveyed, and random individual interviews were also conducted to verify findings.
3. Over the past three decades, Jamaica has had one of the highest rates of deforestation in the world, causing serious problems of soil erosion, watershed destruction, and biodiversity loss. This management crisis points to the need for new approaches, and particularly mechanisms such as Local Forest Management Committees, which involve community stakeholders along with relevant state bodies in a mutual exchange of information and shared decision-making regarding forest management.
3. Poverty in the Pencar watershed is tied to decades of poor land use on steep slopes resulting in deforestation, erosion, and vulnerability to natural disasters; lack of access to resources; weak markets; lack of educational opportunities; and dependent attitudes stemming from the days of plantation agriculture. Poverty is manifested in low employment, a lack of land ownership or tenure, poor housing, growing levels of illiteracy, weak community organizations, and general feelings of hopelessness. While only 25% of the population of the watershed can be characterized as poor, an additional 35% are “near poor” and at risk, and only about 10% can be classified as middle class. Poverty is not spread uniformly among the watershed communities, but is most prevalent in those areas where there is the least access to resources such as roads, schools, and adequate farmland.
4. Hillside cultivation in the watershed is now carried out by farmers without any state guidance, resulting in poor crop yields of low quality. Very little river training is carried out on the two major rivers, resulting in devastation for bottomland communities in times of heavy rains, as was the case in March 1999 and November 2001.

5. Forest management initiatives in the watershed have been intermittent. FIDCO's plantation activities in the 1970s into the 1990s had a major positive impact on the watershed in terms of employment generation. A USAID-funded Hillside Agricultural Project in the 1990s, which included watershed management and reforestation components, was largely a failure due to lack of follow-up and insufficient community involvement. More recently, the extension work of the Forestry Department through the Trees for Tomorrow project has been well received.
6. The development of the Local Forest Management Committee established in the watershed has been hampered by the weakness of most of the member organizations and by the lack of involvement of key decision-makers and government agencies other than the Forestry Department. Its major impacts to date have been through work on the ground, such as the current initiative to start a plant nursery in Enfield/Reddington.
7. Forest resources currently play only a very small role in local livelihoods, largely through a limited and decreasing amount of timber production using small portable saws. Through proper management, this production could be increased. Further, there are a few small-scale ecotourism initiatives using hiking trails in the area, which could be developed further. There are also a number of opportunities to develop fruit trees, medicinal herbs, and woodcrafts in support of the local tourism industry. All these would require programmes of technical assistance and support.
8. Improved watershed management, especially in the upper reaches of the watershed, is a pressing need. Demonstration projects, environmental education, and training for farmers are required to change attitudes and practices. Community awareness and involvement could also be enhanced through a voluntary forest warden programme to protect forest and river resources.
9. The Forestry Department is currently the only government agency that the communities perceive to be engaged in forest and watershed management. Many of the issues that need to be addressed require the active participation of other agencies, including RADA, NEPA, and NWC, as well as stronger community-level leadership than currently exists. National development policies must reflect the urgent need for improved watershed management and facilitate interdisciplinary, multi-agency approaches.

Terms of reference and objectives of study

This study of poor and at-risk populations in the Pencar watershed and their existing and potential benefits from forest resources was conducted as part of a larger research project being undertaken by the Department of Forestry and the Caribbean Natural Resources Institute. That project is examining the process of developing Local Forest Management Committees in the Buff Bay-Pencar watershed as a mechanism for enhanced community participation in forest management.

In order to address the twin concerns of poverty and participatory management of forest resources, the following issues were considered in this study:

1

- Characterization of those portions of the populations living in the Pencar watershed living in or at risk of falling into poverty (geographic location, gender, age, level of poverty or risk, etc.)
- Identification of the major factors negatively affecting the economic well-being of local populations e.g., access to resources, market factors, natural disasters, education and skills.
- Description of the avenues and mechanisms through which poor and at risk populations participate in decision-making about the use and management of the watershed (e.g., local organizations, community groups, churches, political channels, social structures).

2

- Identification of ways in which local populations in the watershed, particularly at risk populations, make or have made use of forest resources for their livelihoods, with attention to the following:
 - The forest resources that are or have been of value to local populations, especially the poor and other disadvantaged groups
 - How those resources have been used
 - How accessible those resources are
 - The forest resources and uses that could potentially be of benefit to these groups, and what would be required to make them available
 - The perceptions of the groups regarding the role of the Forestry Department and other government agencies in determining how and for whom forest resources are used.

Methodology - time table and techniques

This survey was to glean information from the populations in the Pencar and Dry River sections of the larger Pencar Buff Bay watershed. The Pencar section comprises 21.7 % (4,395.99 ha), while the Dry River section makes up 25.2 % (5,095.12 ha), totaling 46.9% (9,491.11ha) of the entire watershed, which is 20,558 ha in size as indicated in the field surveys conducted in August 2001. The chart below indicates how the study was executed.

July 16-----	} Submission of work plan to CANARI
	} Case study to begin with familiarization tour of watershed
23-----	{ CANARI to review work plan and relay comments
30-----	} Literature, reports and records review

August 6-----	} Data collection, Long Road/Come See/Hope Hill/Fort George
13-----	} Camberwell/George's Hope/Baxter's Mountain/Gray's Inn/Itoboreale
20-----	} May River/Tinsbury/Enfield/Forty One/Junior Pen
27-----	} Epson/Dover/Government/CBO's/NGO's

Sept. 3 -----	} Data summary and analysis of findings
10-----	} Preparation and submission of draft report to CANARI
14-----	{ CANARI to review
23-----	{ draft report

October -----	} Additional field work to clarify a few points for the final report
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November --	} Presentation of report to CANARI and Forestry Department (November 7) and completion of final report
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The major technique used to collect data was qualitative in nature and is commonly referred to as participatory learning and action. This technique was developed from work done with natural and environmental projects, especially from a concern with the frequent lack of sustainability. PLA, when used in conjunction with participatory rapid appraisal (PRA) techniques, allows for coverage of a wide area in a short time. The outside researcher facilitates analysis by the people,

who can then use their own insights as the basis for action. The people are the centre of the process, allowing community members to make use of pie charts, maps, Venn diagrams, fixed scoring, time-lines etc. as the visual tools to assist in their explanations.

An attempt was made to triangulate (verify) these explanations (answers) with more in-depth one to one interviews. These interviews were randomized, stratified, and carried out among youths, women, farmers, tradesmen, professionals and general opinion leaders (“village leaders”) in the various communities.

The communities surveyed included Long Road, Fort George, Baxter's Mountain, Camberwell, Pleasant Hill, Forty One, May River, Junior Pen, Epsom, Eddie Hill, Two Paths, Mount Josephs, Atlantic, and Annotto Bay. More research was done using pie charts, maps, Venn diagrams, time lines, fixed scoring, listing and well-being ranking. Community members were drawn from cross sections of the various communities. All the above districts were linear communities in structure and for the most part discussions took place at popular meeting places, village shops or areas popularly used as village squares. Discussion groups numbered from three to eight persons. In Long Road, Baxter's Mountain, Camberwell, Forty One, May River, Junior Pen, Enfield, and Epsom some six discussions were held per community with different groups.

In terms of one to one interactions, use was made of a formal questionnaire (Appendix 1), with each community having as many as five individual interviews, with interviewees verifying a lot of what people in the group discussions were saying. Interviewees were selected to include professionally inclined village lawyer types (older persons) who our gatekeepers recommended as having a good knowledge of the community. Included also were tradesmen, farmers, mature females and youngsters.

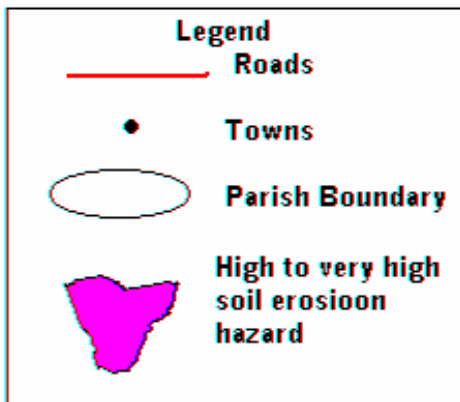
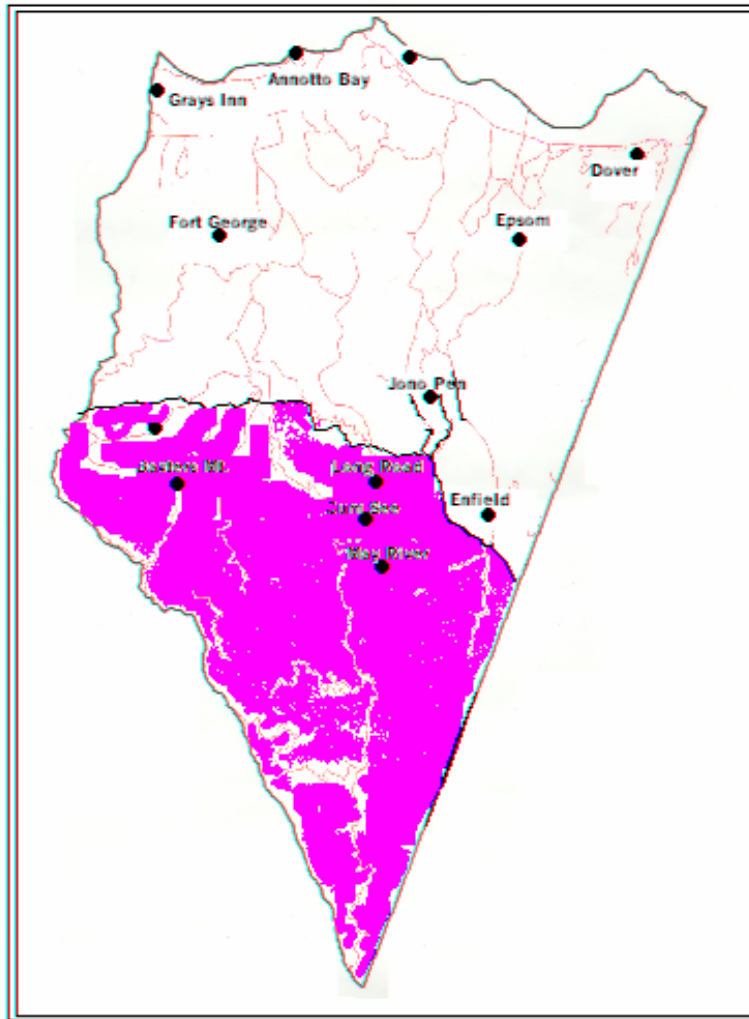
The following table characterizes the interviewees:

Interviewee	Economic level	Gender	Age group	Remarks
Professionals	lower middle class	50:50	40-60	own home, car and settled lifestyle
Tradesmen	working class	male	30-45	periodic employment
Farmers	peasant class	male	35-57	mostly small farmers
Women	peasant class	female	25-50	rearing children
Youth	peasant class	50:50	17-25	mostly unemployed

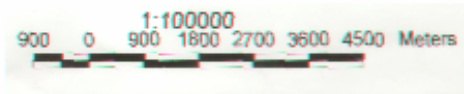
Background and overview

According to World Bank estimates, one-fifth of the world's population lives in absolute poverty and especially so in third world or developing countries, where 40% are in this position. In the 1980's, UWI sociologist Derek Gordon estimated that one-third of Jamaica's population (32.7%) was below the poverty line (those unable to purchase the standard basket of food, psychologically affected by crime, insecurity and chronic hopelessness) and more than 70% of all the destitute were to be found in the rural areas (Gordon 1989). The World Commission on Environment and Development, and indeed our local food security experts, pointed out that per capita food production declined between the years 1973/74 -1983/84. More so, succeeding Governments buckling to the Washington consensus and acceding to the TINA (there is no alternative) mentality have led to, amongst other things, a demotivated forestry and agricultural extension service and a steady stream of imported farm produce. The Pencar River hill community economies have stagnated over the years under chronic levels of underdevelopment involving such problems as poor land use, lack of access to resources, poor roads, weak markets, lack of educational opportunities, high illiteracy rates, high rates of deforestation and soil erosion, and a dependent attitude. The local agricultural cooperatives have also clearly demonstrated an inability to survive given the levels of unfair competition from imported goods. Shirley (1993) discussed the market failure in which the domestic markets were unable to consume what really amounted to survival levels of production of farmers in the Long Road/Come See/Hope Hill area. This indicated that where the market fails, production will fall, as there is no incentive to produce. We are now seeing a last minute desperate attempt by the NGO St. Mary Rural Development Project (SMRDP) to restructure these cooperatives to forestall failure. Here again communities' lack of interest, motivation and concern for their own economic welfare has its genesis in the history and culture of plantation life, which can only be addressed with a bottom up approach rather than the present trickle down one.

It is with this context in mind that participatory management concepts united around the Local Forestry Management Committees (LFMCs) and involving all users of the forest, including state bodies, must dominate new approaches to managing forest resources. The state bodies must shoulder some responsibility for the slow-down of forestry activities nationally and particularly in the Pencar watershed where respondents reminded us of the good days of FIDCO, when local populations earned regular income from reforestation and road construction activities. The Trees for Tomorrow project extension officers and officers from the Forestry Department have through efforts like the Enfield-Reddington plant nursery has once again raised expectations and are therefore challenged to offer these communities a new "lease on life" with the new vehicle being the LFMC.



Basemap of the Pencar Subwatershed in St. Mary



Characterization of land use in Pencar watershed

As with many of Jamaica's twenty-six crucial watersheds, Pencar communities share a common history of plantation agriculture, where the gentler slopes (3-20 degrees) were used for sugar cane and banana cultivation and to a lesser extent livestock rearing. This fact came to bear heavily on the practices of the watershed, particularly on upland farmers who continue to use traditional methods to eke out an existence rather than more modern progressive conservation measures. Community elders remember the days when members earned their daily "bread" from working on the sprawling Gray's Inn Sugar Estate. The estate they claimed became a failure, "like nuff a de plantation dem inna slavery time" says a bright elderly respondent, and was allowed to go to "ruins and grassland". The Pencar watershed is drained by the Dry and Pencar Rivers, the latter giving the watershed part of its formal name of Buff Bay - Pencar watershed. It is estimated that just over one-third of the watershed has slopes greater than 26 degrees in tremendously long slopes; therefore the removal of vegetation from these slopes results in severe erosion and desiccation.

The Dry River has a mean elevation of 289 meters (Trees for Tomorrow Project 2001) with several tributaries and one of the largest villages, known as Enfield. This village stretches for about eleven kilometers from Tinsbury in the southernmost hills to Fort Stewart on the flatlands in the north below. It has about seven offshoot communities comprising over five thousand persons. The names of the communities in order of population are Junior Pen (often called Juno Pen), Enfield, Forty One, Tinsbury, May River, Fort Stewart and Hill Sixty. Junior Pen is the most developed section with a population of over 2,000, with Enfield located just above it. All are linear communities with the Dry River flowing to their right (observed from northerly direction). Pencar River and its tributaries drain the other side of the basin (parallel to the Wag Water watershed; see attached map) and have a mean elevation of 296 metres. Both rivers share a similar geological formation - Richmond bed series (Trees for Tomorrow Project 2001) - and include such major communities as Long Road, Come See, Hope Hill, Fort George, Pleasant Hill, Baxter's Mountain and the coastal strips of Annotto Bay and Itoboreale.

Unlike the coastal strips of Gray's Inn, Itoboreale and Annotto Bay, the uplands are very steep and highly erodable and though the topography is not farmer-friendly, it is here we found the greatest concentration of small-scale peasant agriculture. In these areas too we found the clearest evidence of improper cropping of the land, with slash and burn agriculture, cutting of timber for lumber, loose rearing of livestock and an absence of the state bodies that should provide proper forestry and soil conservation guidance. The result is severe soil erosion of all types (sheet and gully), and with heavy rains both rivers and their tributaries flood, with damage to river banks, vulnerable populations, roads, buildings, homes, farms, and crops, and desiccation of land, causing flooding downstream and channeling of tonnes of precious topsoil to the sea. Present rates of soil loss clearly exceed any level that would be deemed as sustainable. The situation is not assisted by the farmers in such areas as Tinsbury, Mount Joseph's, May Hill, sections of Long Road and Come See, who are involved in growing of clean cultivated carrots on Government (Crown) lands without soil conservation measures. Carrots are a major source of income for these communities and are grown on a loose contract agreement to Grace Food Processors Ltd. to be used for carrot juice. Farmers are predominantly males with most over fifty

years old with the exception of Tinsbury, where we saw a lot of young men (aged 16-30 years) turning to carrot cultivation to make a living.

Logging for timber on both cultivated and natural forest has been reduced to a mere trickle, with no trace of the saw mills that were once found in the active years up to the 1980s in the districts of Epsom, Fort George, Dover or Long Road. We were only able to identify one active saw mill, located on the border of the Buff Bay watershed in the district of Windsor Castle but which also serves the Pencar area and offers part-time employment to two persons. There is now a preponderance of individual portable power saw operators who log and transport what lumber they can glean to be sold to Kingston furniture shops.

Geographic overview of the Pencar watershed

The communities in the watershed can be organized generally into three groups based on a range of characteristics, as indicated in the following table.

Characteristic	Group 1: Baxter's Mountain, Camberwell, Come See, Eddie Hill, Fort George, Hope Hill, Long Road, Pleasant Hill	Group 2: Annotto Bay, Enfield, Epsom, Forty One, Junior Pen	Group 3: Cottage, Golden Spring, Mount Joseph, Spicy Grove, Two Paths
History	Estate peasantry	Estate peasantry and land owner	Estate peasantry
Land size	Small-medium	Medium-large	Large
Terrain	Steep hillside	Steep and flat	Steep hillsides
Level of development	Undeveloped	Developed/developing rapidly	Undeveloped
Demographic spread	Sparse/linear settlement	Linear and dense township	Sparse/linear settlement
Links	Isolated	Connected to a network of developed communities	Very isolated
Road/transport system	Roads poor, needing repair; transport available up to 8 p.m.	Fair roads (need some repair) and transport system	Horrible, no road system
Utilities (water, electricity, telephone)	Extremely poor, telephone booths, no cell phone coverage	Fairly good	Extremely poor; no or very little cell phone signal in some areas

Factors negatively affecting economic well-being

Pencar River communities have been struggling for years with such negative factors impacting on their development as access to resources, poor markets, poor education, lack of skills and natural disasters.

Land ownership and tenure

The land question is no more glaring than in the rural areas where peasant farmers have been forced to eke out an existence from steep, often stony hillsides, while the flat bottom lands continue throughout the years in plantation crops and in some instances beef cattle. In response to the question of land tenure by respondents, I discovered that about half the land in the watershed is owned by Government and members of outside communities. Persons using the land enter into a variety of lease agreements. The problem, as several persons explained, is that much of the land is idle; one cannot secure lease for these lands. Land owning families are large and scattered and leasing requires several members to give approval; many land owners are reluctant to lease, rent or sell, in addition to which there is large-scale envy evident in divided rural communities. The other problem is that the better lands “especially the flats” belong to the Government. The land tenure situation of people living in the watershed is roughly as follows:

- 40 % own family land
- 40-50% lease
- 10-20% capture

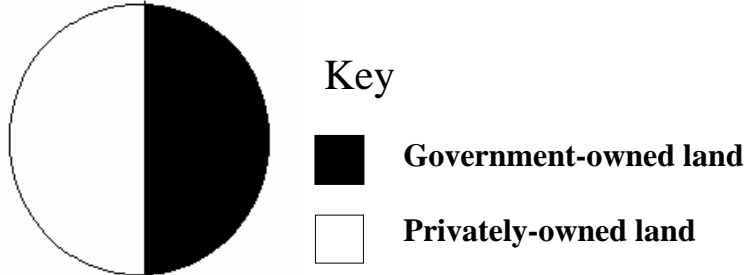
From the highest points from which the Pencar tributaries flow the constant cry is for land. It is not uncommon to hear expressions like “Bwoy a wooda do dis ting big but no land” (Gayle *et al.* 1999). This area is pretty large, comprising the upland areas of the watershed and encompassing major communities such as Long Road, Come See, Tinsbury and Hope Hill. The problem is therefore that the land is too steep “not to mention the gullies dem, some if you drop in dem you helpless”. The issue of land ownership is critical. The respondents in this area seem to have the “least ownership of land”. Several persons lamented, “is only pure hillside we have, we poor people nuh own it like Fort George, Forty One or Dover people”. Another interesting feature of the ownership issue in the Long Road, Tinsbury, May Hill, Come See area is that of capturing, as very few young persons in the communities own lands, but instead engage in capturing lands - meaning planting on Crown lands or land owned by others. In these areas, the breakdown is approximately as follows:

On the other hand, Pencar central basin areas of George’s Hope, Fort George, Baxter's Mountain and Camberwell are somewhat less steep other than the Long Road area, but have a similar problem of suitable cultivatable area except in the lower Fort George/ Baxter's Mountain area where there are some flat lands but owned by outsiders, Government, and the St. Mary Banana Estates Ltd. The other flat bottom lands of Gray’s Inn, Annotto Bay, Lower Fort George, Osborne areas and Itoboreale comprise areas once in sugar cane and bananas, but now slowly being urbanized, rather in a loose unplanned manner with a sizeable chunk still in banana production.

Comparatively, in the Dry River communities of Enfield, Reddington, Forty One, Junior Pen (Dover Woods), Brown Hill and Epsom, only about twenty percent of the area used for farming is leased. “Some of it the owner a we same one”, it was explained. About 45% is Government (Crown) land. The remaining 55% has been passed down some four generations to present occupants. Ownership of land, as told to us and observed, is the most critical source of pride and identity in this section of the watershed, with only education seeming as important. Much of these lands are in larger parcels of fifty to one hundred acres on fairly steep slopes. Approximately a dozen or so families can be easily identified, with very few of the lands in any

form of use excepting natural forest. In fact a somewhat similar situation exists in some areas of the Pencar Basin.

The pie below shows overall land ownership in the watershed



Families owning land in Dry River area

Family	Approx. acreage	Remarks
1. Pottinger R.	200	Abandoned cocoa farm
2. Gutzmore A.	80	Small amounts of cedar, mahogany, Spanish elm and natural forest
3. Lafayette P.	200	Natural forest
4. Watson B.	80	Natural forest
5. Bendor J.	70	Natural forest
6. Bent E.	70	Natural forest
7. Bernard C.	90	Natural forest
8. Eddie L.	50	Natural forest
9. Roberts M.	70	Natural forest
10. Beckford L.	89	Natural forest
11. Forrester L.	90	Natural forest
12. Franklin C.	55	Natural forest
13. Laidly L.	75	Natural forest
TOTAL	1,219	

Families owing land in the Pencar Basin (Fort George) area

Family	Approx. acreage	Remarks
1. Espeut H.	50	Scattered forestry trees with long lease of 150 acres at Pleasant Hill. Farmer of plantain, pumpkin etc.
2. Wright H.	50	Livestock beef farmer; natural forest
3. Dacosta M.	150	Citrus farmer with natural forest
4. Brooks G.	200	Horticulturalist with land in natural forest
5. Espeut W.	40	Abundant cocoa farm and natural forest
6. Murry R.	40	Abundant cocoa farm and natural forest
7. Phillips Dr. G.	200	Natural forest
8. Clarke B.	200	Natural forest
9. Lewis S.	50	Goat rearing with abundant cocoa farms; natural forest
TOTAL	980	

The following pie chart illustrates what a number of groups explained:

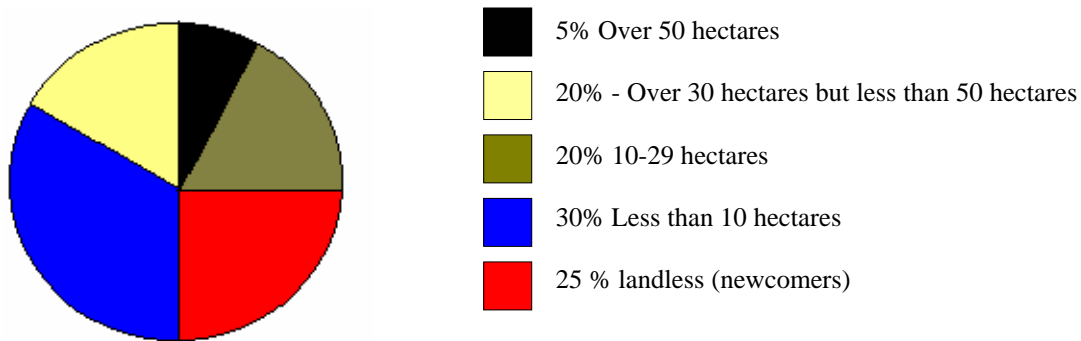


Table showing distribution of farms by level of farming

Percent %	Level of farming	Definition
40%	5%	Big more than 10 hectares
	15%	Medium 5-10 hectares
	20%	Small & regular 2-4 hectares
60%	30%	Small & irregular 2-4 hectares but inconsistent
	30%	Hand to mouth 1-2 hectares or piece of land

The United States Agency for International Development’s Hillside Agriculture Project in the 1990s spent millions of dollars on agroforestry (fruit crops) in the steep slopes of the watershed areas such as Camberwell, Fort George, Long Road, Enfield and Forty One, attempting reforestation and watershed development. These efforts initially involved some level of community participation but clearly were not very sustainable, as the effort was not continued and cocoa farms that were resuscitated went to ruin. The mango tree-top work ran out, fruit trees distributed died, and land husbandry activities that were done have been demolished. Standard of living objectives that were set for local populations were only temporarily met, resulting in levels of self-reliance being set back by years. This can be attributed largely to the short intervention period and lack of continuation after the project withdrew.

Housing

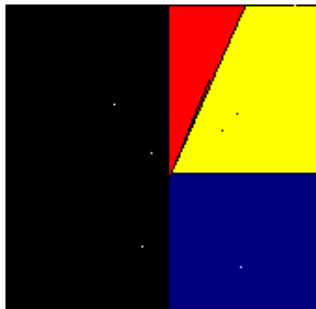
The housing situation gives further evidence of the social conditions of the population in the watershed, as people readily pointed to the housing stock. Most of the houses are over thirty-five years old and you “notice them not repairing dem; dat tell you de people don’t have any money”. This is quite visibly triangulated to even the most casual visitors journeying throughout the watershed areas. We observed that only approximately 10% of the houses showed signs of being renovated. These were mainly larger houses, meaning three to five bedroom concrete and wooden houses. The average house had two rooms with many made of wood and occasionally precariously perched on steep hillsides or too close to the Dry River coast, its tributaries or abandoned river coast. This had the effect of “setting up” the local population for the next heavy round of rainfall and eventual flooding out. Indeed this was one of the factors contributing to the loss of life and terrible devastation during the early November 2001 rains (750 mm), when some

members of the Brown Hill and Enfield communities lost their houses. This has forced the Government to rapidly and without careful planning put up housing schemes on flat cultivatable lands, which will force farmers upland to cultivate, expanding the area of destruction in the watershed. There is however a thin stratum of the population, most of whom live in areas such as Annotto Bay, Itoboreale and Enfield, who have traveled abroad and returned. They along with a few others live in the Camberwell/mid-Fort George area and are easily identified by the large size of their houses, ownership of houses, and “settled no worry” lifestyle. This also includes a trickle of lower income level professionals and retirees.

Education

This is a major problem throughout the watershed but is particularly acute in the more isolated communities with a strong estate culture, e.g., Fort George, Baxter's Mountain, Camberwell, George's Hope, Long Road, May River, Tinsbury, and Epsom. “A blouse a skirt crisis dis”; “many man can check them gambling money good” but are nonetheless illiterate. This does not only cause savage conflicts in many houses, churches, businesses and one to one interaction, “but have a dutty effect pan de running of most development projects” (SMRDP) due to an inability to effectively communicate. This argument we triangulated several times and remain saddened by the large percentage of men, women and especially young people that are unable to read or write throughout the length and breath of the watershed.

The pie chart shows the education levels of the community people.



Key

- 50% illiterate, almost all men in this group dropped out of school or never attended school
- 25% can help themselves at about grade four level and can sign name
- 20 % completed all-age school
- 5% some level of secondary/tertiary education

Two communities that seem to have more than average levels, barring the coastal strips of Annotto Bay and Itoboreale, are Enfield and Dover when compared to many of the other isolated communities. In fact, respondents had difficulty identifying ten person who were known illiterates. A most positive development is the recent opening of the new Annotto Bay Junior High School, which is being fed by students from surrounding primary and all age schools.

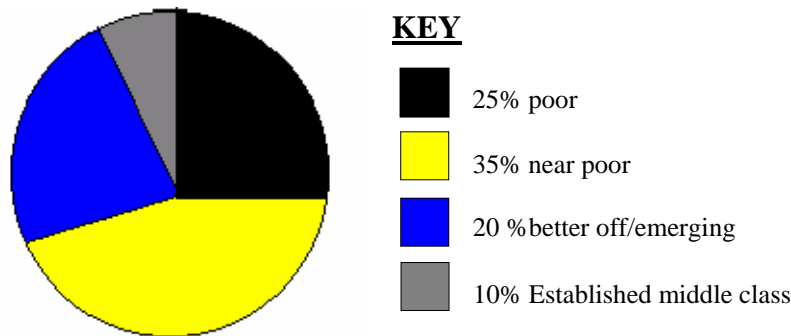
Well being

Most respondents were eager to point out their large family sizes averaging over four children with only “one person doing something to make a living, other than farming”. For young people the unemployment level seems unbelievable, “they have nothing to do, no skills to sell; they depend on us”, many mothers complained. Many youth gamble (full time) their little money (Epsom, Annotto Bay, Long Road, Fort George and particularly Pleasant Hill areas) “and dem don’t even have ambition”. Child bearing seems to be a full time occupation as the young unemployed girls spend their younger, more vigorous years (14-35) rearing children and at some point over 35-40 years, they again get involved in productive economic activities. Respondents were of the view that these hill communities would not grow if young people remain unskilled, unemployed and in a state of hopelessness.

When indicators such as the levels of housing, land ownership and availability, and education and the low levels of literacy, chronic unemployment, and the lack of economic opportunities are considered alongside the various agricultural problems, community people are poor in spirit. Most people actually feel poor and are desperately in need of some form of major outside interference to break the “vibes” of dependency and hopelessness. Hopelessness is seen in the coastal areas of Annotto Bay ghettos where crime, beach destruction, youth unemployment, teenage pregnancy and drug addiction are fast overtaking the local populations. Thus one is reminded rudely of the growing time-bomb, as just as recently as June, a good Samaritan of the community, a young Jesuit priest Father Martin Royakers was shot to death at the St. Theresa’s Catholic Church, Annotto Bay, at close range. Martin was my immediate supervisor and active director of the SMRPDP where he actively helped the Annotto Bay populations in housing construction, supplying food, school books, school uniforms, family advice, and money for school fees, and farmers in the hills with fruit trees, fertilizer, planting materials and in the marketing their farm produce. He was killed by a single shot piercing his lungs, heart and spiritual cord, resulting in immediate death. No one has yet come forward to give any information to the police as to his killer/s, though it is noteworthy that neither he nor the church was robbed although he died clutching the church keys.

However not in every district are conditions overbearing; in fact, those considered absolutely poor (struggle to find food and maintain health and whose children cannot attend school on a regular basis) are in the minority. They are mostly found in the communities of Epsom, sections of Camberwell, and some areas of the carrot belt of Mount Joseph and May Hill. However the more destitute areas are Fort George, Pleasant Hill, and parts of Long Road and Fort Stewart.

The well-being pie chart below illustrates the point



Avenues and mechanisms for local participation in decision-making

Though the Forest Act of 1996 mandates the participation of communities in forest watershed activities, there has been no real evidence if this happening on the ground in a serious consistent way. Most forestry policies in the developing world now hinge on community participatory management (Buttoud 1999) and the bringing together of the various users of the forest. The LFMC, which was launched in September 2000 involving over twenty organizations, has amongst its main aims improved forest management and protection. This should in the long run improve local community benefits from the forest through improved environment etc., and increasingly allow for a free and full flow of information between participants, since holding back of information can maintain power and derail the model being pursued, thereby disturbing potential benefits for community development. However what is worrying is the lack of political representation and overall weakness in leadership of member organizations. This is so with the exception of the Camberwell, Fort George, Enfield/Reddington and Epsom areas, where community organizations are relatively strong. However the Trees for Tomorrow project and the Forestry Department must be congratulated and encouraged at this level of innovative motivation. The LFMC has been quietly making in-roads, especially in the case of the current implementation of a plant nursery by the Enfield/Reddington local committee. Though many respondents had insufficient knowledge of the LFMC and individual organizations were weak and showing varying levels of activity, with a few exceptions, the LFMC has raised expectations and the communities will rise to the occasion. There are two very active community organizations: the River Edge Citizens and Camberwell Primary Past Students and Citizens Associations. These two organizations are beneficiaries of Jamaica Social Investment Fund/Eastern Jamaica Agricultural project funds to repair their communities' road, roads that have been in need of repair for decades. On the other hand, the marketing cooperatives in the areas of Long Road, Fort George and Forty One, which for a while were the centre of community-based activities, are in a critical reorganizing (downsizing) phase. The LFMC member organizations, NGO organizations and other community based organizations including the churches offer the clearest indication of local stakeholders participating in forestry management; this is even more so true when these communities are firmly motivated and made aware. The following table provides a listing of LFMC member organizations and their current level of activity in the community.

Organization	Area	Characteristics	Activity level	Contact Person
Camberwell Citizens	Camberwell	CBO	very active	Ella Thomas
Camberwell Primary/P.S.A.	Camberwell	CBO	very active	Yvonne Forester
Camberwell P.T.A.	Camberwell	CBO	very active	Percival Moore
Long Road Corp.	Long Road	CBO	dormant	Vida Forrester
Fort George Corp.	Fort George	CBO	dormant	Lincoln Thompson
River Edge Citizens	River Edge	CBO	very active	Cavel Chuck
Pleasant Hill Citizens	Pleasant Hill	CBO	dormant	Gladstone Byrd
Enfield Citizens	Enfield	CBO	active	Austin Merchant
Mt. Joseph J.A.S.	Mt. Joseph	CBO	dormant	Samuel Frazer
Enfield J.A.S.	Enfield	CBO	not very active	Elfreda Lester
Forty One Co-op	Forty One	CBO	dormant	Joan Bendor
May River J.A.S.	May River	CBO	dormant	M. Sinclair
Reddington J.A.S.	Redington	CBO	very active	Anthony Gutzmore
Epsom Golden Agers	Epsom	CBO	dormant	Anthony Simpson
Junior Pen J.A.S.	Junior Pen	CBO	dormant	Raymond Green
Epsom Neighborhood Watch	Epsom	CBO	active	H. Grosset
Progressive Movement		CBO	dormant	Lotoya Brown
Four Square Church	Enfield	Church	not active	Derrick Ashmeade
St. Mary Banana Estate	Annotto Bay	private	functioning	Mr. Reid
Enfield Golden Agers	Enfield	CBO	dormant	
Annotto Bay Police	Annotto Bay	State	weak	Insp. Jacob James
St. Mary Rural Development Project	Annotto Bay	NGO	active	Winston Mills
Cocoa Industry Board	National	State	not very active	Lance Jones
RADA	National	State	not very active	Lenworth Taylor Norman Baugh
NEPA	National	State	active	Michael Johnson
Forestry Dept.	National	State	very active	Danny Simpson
Epsom Police Youth Club	Epsom	CBO	active	Deon Ayres
Annotto Bay Eastern Jamaica Agricultural Support Project	Annotto Bay	CBO	dormant	Sydney Gutzmore

Forest resources of potential benefit to local populations and the requirement for making them available

Local use of forest resources beneficial to watershed communities has been largely limited to logging and lumber sales. This, the local population explained, occurred during the key days of the USAID Forestry Industrial Development Company Ltd. (FIDCO), in the 1970s to 1990s, when steep hillside lands in upland areas of Camberwell, Pleasant Hill, Fort George, May River, Mount Josephs and Long Road were sold to FIDCO for forestry development. Many communities benefited immensely when hundreds of persons gained useful employment from FIDCO in reforestation, road construction activities and later harvesting of Caribbean pines. Communities benefited from the environmental protection provided by reforested areas, in terms of erosion loss, watershed protection, and increased biodiversity.

Communities could similarly benefit from increased attention to ecosystem management through the LFMC, which could have the potential value of improving timber harvesting and watershed management, and in the case of downstream communities dependent on the sea for a living, increasing fish catches and improving protection for endangered marine species threatened with beach pollution and other soil erosion hazard etc. Ecotourism could be improved with development of many forest trails throughout the upland watershed areas. This would strengthen current links with hotels such as the Mocking Birds Hotel in Port Antonio, which currently sends tourists (mainly Europeans) on trail hikes up from Long Road to Hope Hill, a two mile trek, observing folk medicinal plants and enjoying a couple of long mangoes on the way. This is an initiative of SMRDP and guests are encouraged to make gift purchases from the Long Road spice shop.

Additionally River Edge, a private ecotourism venture based in the Fort George area, makes hikes up the Minott forest road where tourists have baths in the big river. This links up well, as tourists traveling from Long Road area will hike down through Come See district, lunching at River Edge then bussing back to the main Annotto Bay road. Informed local people found the bamboo made house recently displayed at Gray's Inn interesting and claim that the watershed areas abound with bamboos, which could replace imported bamboos, or if not new and better varieties could be introduced. Other potential benefits include wood for charcoal burning, sticks for mop and broom making, and herbs for folk medicine.

The dominant trend among many of the hill communities is clean cultivated crops on the steep hillside, using slash and burn methods, with loose rearing of livestock. Potentially these areas could be cropped under an agroforestry programme of dwarf exotic fruit trees such as june plums, jack fruits, soursops, sweetsops, mangoes, naseberries, passion fruits, ackee, etc. Many areas around Long Road, Hope Hill, May Hill, Atlantic, Camberwell, Pleasant Hill, Fort George and Baxter's Mountain depend heavily on the "long mango", particularly so in the Long Road area. The long mango, which is an indigenous very sweet, very tasty, medium, kidney shaped mango and which appears to be a take off from the East Indian variety, is sold for between \$60 and \$120 per dozen to vendors who sell mainly on the north coast. The dependency on the long mango crop is such that many other projects sponsored by the SMRDP through the Long Road Cooperative have had only marginal successes. This has been particularly disappointing for it was planned for many young farmers to graduate to the leadership of the cooperative; so they were encouraged to grow coffee and fruit trees, since Long Road is thought to be unsuitable for crop agriculture. During the June to December period most people including "dem who tief peoples mango too" are happy and active. It is during this period "a man can mek \$2,000- \$3,000 a day" from the sale of mangoes, some of which he will lodge for use during the slow period. It is against this background that a dwarf fruit tree programme targeting long mango trees for cut back and tap-working could be introduced. Here also, agroprocessing (juices, purees, nectars, jams) could be manufactured, exploiting the local tourist trade and other export possibilities.

Local perceptions regarding the role and performance of the Forestry Department and other government agencies in determining how and by whom forest resources may be used

Local populations, including many respondents we spoke to in the Enfield, Epsom, Forty One, Fort George, Long Road, Atlantic and Camberwell areas, were extremely kind to the Trees for Tomorrow Project and Forestry Department. These communities, though unaware of the activities of the LFMC, had high praises for the Trees for Tomorrow extension officers. This is due mainly to a number of private demonstration areas and schools plots (Camberwell, Baxter's Mountain all age schools) where a fair amount of field work was done, together with the current attempts to set up a plant nursery by the Enfield-Reddington-Fort Stewart area of the watershed. Also, despite the lack of knowledge of the LFMC, Long Road, Epsom, Camberwell, Enfield, Fort George, Baxter's Mountain, Atlantic, etc. farmers admitted to receiving varying quantities of cedar, mahogany, Spanish elm, and lumber tree seedlings. The TFT/FD extension officers are to be encouraged and congratulated, as it is these practical community efforts that will reinforce and promote the LFMC.

Many respondents complained that for many years they have been without the advice of an agricultural extension officer. This is despite the fact that RADA has a knowledgeable, dynamic officer now in place for over a year. Very few respondents knew of the Natural Resources Conservation Authority/National Environmental Protection Agency. Their officers were never seen in the watershed at all. The National Water Commission was known, but mainly in the coastal communities, e.g. Annotto Bay, Dover, Itoboreale and Fort George. Respondents in Epsom complained bitterly about the National Water Commission, even to the extent of being ignored in their customer service office in Port Maria, where they had gone to make complaints. There is a similar situation in Long Road and Pleasant Hill where the SMRDP, seeing these communities' plight, has brought pipe lines and repaired the systems, laying new pipes from Hope Hill to Long Road and along the Pleasant Hill road. It is noteworthy that respondents could not identify any impact that any of these state agencies had on how local populations access forest resources. The only exceptions were the Forestry Department and Trees for Tomorrow staff members. Local people doing road repairs and fixing pot holes indicate to anyone journeying through the watershed the non-maintenance of roads through the upland areas, where even when communities repair the roads, the State cannot complement those activities.

Summary and recommendations

Jamaica's agrarian landscape remains scarred by gross inequities between plantation and hillside farms in terms of land size and quality. Troubled by the legacy of economic dependency, our fragile natural environment has not escaped years of abuse and neglect. Global competitive forces have now forced us, a small nation, to search with renewed urgency for effective and sustainable solutions:

- C to maintain and increase water supplies and quality
- C to improve forest cover and reduce flood damage
- C to minimize erosion and sedimentary hazard through soil conservation measures
- C to regulate the timing of stream flow, with the ultimate aim of improving hillside cultivation.

There are several issues which must be highlighted in attempting to establish forestry programmes addressing these problems with central input from the communities. These include the following:

- ✍ the socio-political and economic (plantation) history of many communities stuck with deep-seated problems such as high illiteracy, dualistic ownership of land, dependence on rainfall agriculture, poor roads and transportation, praedial larceny and lack of awareness (public education)
- ✍ the acceptance by several succeeding governments of TINA (there is no alternative) in response to international financial pressures on the Jamaican economy, resulting in inappropriate policies that further re-enforce economic dependency
- ✍ serious lack of communication, technical inadequacies, poor NGO-State sector coordination within the communities, and lack of concern about the environment, particularly as it relates to issues such as watershed management/training and ecotourism possibilities
- ✍ extremely weak political and community leadership in providing suitable infrastructure and complementary development alternatives such as markets, job possibilities, and other productive economic (industrial) activities.

To improve and begin to correct some of the problems being experienced in the Pencar watershed, the following recommendations are submitted for study and implementation:

- ✍ Introduced jointly with RADA and concerned NGOs, an agroforestry programme planting fruit trees such as ackee, soursop, june plums, breadfruits, jackfruits etc. with an emphasis on tree training (dwarf), can improve quality together with suitable forest trees. The ultimate aim would be agro processing and fresh fruits for the export and tourist markets.
- ✍ Encourage communities to agitate for a comprehensive program of land reform as one of the tools to be used in correcting our strategic lack of food security and the persistent threat of Haitian type deforestation of our country.
- ✍ There should be a focus on the youth in groups, schools, 4-H Clubs, and CBOs etc. to teach watershed and soil conservation in a structured programme.
- ✍ Introduce a programme of public education attacking the root problem, and giving support to any agency that has as its aim eradication of illiteracy, especially among young people. However an awareness programme must also be focused on proper forestry and soil conservation measures
- ✍ Station forestry/watershed officers to offer extension services to critically eroded hill communities with the Forestry Department facilitating more experiments such as bamboo for housing, training in plant nursery care, forestry tree seedlings and examining prospects for ecotourism.

- ✍ Integrate an awareness programme (public education) to emphasise to hill communities major dietary changes needed. Our people need to be aware of complex carbohydrates from fruits, vegetables, root crops etc. which can cause chronic lifestyle disease such as hypertension, heart disease, cancer. This can be achieved in coordination with other State agencies.
- ✍ The programme for integrated watershed development should be structured so as to be one pillar of a major national development programme and should involve a multidisciplinary team of agriculturalists, forestry specialists, rural sociologists, agricultural economists, health personnel, extension specialists and live stock specialists, to break the economic hopelessness presently in the watershed area.
- ✍ It was the consensus of most communities that forest wardens (voluntary) should be identified and placed in each forestry area to protect both the forest and the rivers, particularly where misguided elements poison rivers to catch fish.
- ✍ "The powers that be" should insist that some of these recommendations be studied carefully and, if found to be feasible, get implemented so that the cycle where State agencies or donor agencies support "destruction of trees for useless paper production" which then get stored in "file thirteen" is broken.

In closing, I have observed many of the problems retarding our social, economic and political development which are a challenge. Given the will and suitable moral and appropriate leadership, our people would easily rise to them and overcome, as is the inherent nature of human beings.

NB

strictly confidential

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Appendix 1: Survey Instrument

Characterization of Poverty Survey In Pencar Watershed

BY :CANARI
FD/ST.M.R.D.P.
AUGUST 2001

(1a) FARMERS # OR NAME:_____

(b) LOCATION IN WATERSHED: _____

(c) AGE GROUP :_____

(d) EDUCATIONAL LEVEL:_____

(e) FAMILY SIZE : __

(f) NUMBER OF CHILDREN :__

(g) NUMBER OF DEPENDENTS: __

(h) MARITAL STATUS: __

(i) UNION STATUS :_____

(2a) ARE YOU ATTACHED TO A CHURCH yes no

(b) ARE YOU ATTACHED TO A CITIZENS ASSOCIATION OR COMMUNITY GROUP
__ __ yes no

(c) ARE YOU A MEMBER OF THE L.F.M.C. : yes no

(d) ARE YOU A MEMBER OF A COOPERATIVE INCLUDING THE P.C.B. COOP. yes no

(e) ARE YOU A MEMBER OF A 4H CLUB yes no

(3a) DO YOU CONSIDER LOGGING YOUR MAIN OCCUPATION yes no

(b) HOW LONG HAVE YOU BEEN IN THE LOGGING BUSINESS :__ __ YEARS

ARE YOU IN THE COAL BURNING BUSINESS
yes no

(c) HOW LONG HAVE YOU BEEN IN THE COAL BURNING BUSINESS ___ YEARS

(d) HOW LONG HAVE YOU OTHERWISE BEEN INVOLVED IN FARMING ___ YEARS

(e) DO YOU OWN, LEASE, RENT, CAPTURE LAND, (OTHERS) ___
YES NO

(f) WHAT IS THE ACREAGE IN PRODUCTION ___ ACRES

(g) WHAT IS THE ACREAGE IN FORESTRY ___ ACRES (TYPE AF FP)

(h) ARE MEMBERS OF THE FAMILY HELPING IN FARM WORK :yes no

(4a) WHAT PERCENTAGE OF INCOME COMES FROM FORESTRY ACTIVITIES : __%

(b) WHAT PERCENTAGE OF INCOME COMES FROM NON FORESTRY ACTIVITIES __%

(c) DO YOU LIKE THE FOREST yes no

(d) IF YOU HAD A CHOICE WOULD YOU CHOOSE TO INTERCROP FOREST TREES
yes no

(5a) WERE YOU BORN IN THIS AREA yes no

(b) HOW LONG HAVE YOU BEEN LIVING IN THIS LOCALITY __ YEARS

(c) DO YOU LIKE LIVING IN THE AREA yes no

(d) ON WHOM DO YOU RELY MOSTLY FOR TECHNICAL ASSISTANCE _____

(e) WOULD YOU ADVISE YOUR CHILDREN OR FRIENDS TO CONTINUE LIVING IN THE
WATERSHED ___
yes no

(f) DO YOU OWN, RENT, LEASE, CAPTURE, SHARE, (OTHER) HOUSING .

6a DO YOU HAVE ACCESS TO RUNNING WATER :yes no

(b) DO YOU HAVE ACCESS TO BATHROOM FACILITIES yes no

(c) DO YOU HAVE ACCESS TO ELECTRICITY yes no

(D) DO YOU HAVE ACCESS TO A COMPUTER yes no

(e) DO YOU HAVE ACCESS TO RADIO yes no

(f) DO YOU HAVE ACCESS TO TELEVISION yes no

(g) DO YOU HAVE ACCESS TO REFRIGERATOR yes no

(h) WHICH FUEL DO YOU USE FOR THE HOUSEHOLD : _____

(7a) LIST IN ORDER OF PRIORITY YOUR MOST PRESSING NEEDS IN YOUR COMMUNITY
WATER MORE /IMPROVED ROADS MORE /IMPROVED SCHOOLS MORE CHURCHES
 BETTER HEALTH SERVICES ELECTRICITY

(b) LIST ECONOMIC (FORESTRY NEEDS)
 MORE LANDS FOR FORESTRY /AGRO-FORESTRY/
 MORE CULTIVATABLE LANDS
 MORE ECONOMIC ACTIVITIES
 BETTER MARKETING FACILITIES
 BETTER CREDIT FACILITIES
 MORE FOOD PRODUCTION
 BETTER AGRICULTURAL EXTENSION SERVICES
 OTHERS

(c) WHAT NEEDS DO YOU HAVE FOR A FORESTRY/WATERSHED EXTENSION OFFICER
_____.

(8a) LIST IN ORDER OF PRIORITY THREE PREFERENCES OF WHAT THE FD SHOULD DO FOR THE AREA TO ALLOW COMMUNITY MEMBERS TO BENEFIT MORE FROM THE FOREST RESOURCES IF THEY HAD MONEY

1. _____
2. _____
3. _____
4. _____

(9a) LIST IN ORDER OF PRIORITY THE THREE MOST PRESSING NEEDS YOU ENCOUNTER IN EXPLOITING FORESTRY RESOURCES

1. _____
2. _____
3. _____

(10a) (ON A SCALE FROM 1-4 INDICATE YOUR NEED FOR THE FOLLOWING (1---VERY IMPORTANT 2---IMPORTANT 3---LESS IMPORTANT 4---NOT IMPORTANT)

- 1 MORE LAND FOR FORESTRY USE
- 2 MORE LAND FOR OTHER CROPPING
- 3 MORE LABOUR
- 4 BETTER CREDIT
- 5 MORE TECHNICAL FORESTRY GUIDANCE
- 6 MORE SOIL CONSERVATION/WATERSHED MEASURES
- 7 MORE CREDIT/MARKETING FACILITIES

(11a) HOW WOULD YOU ASSESS YOUR PRODUCTION OUTPUT DURING THE LAST 5 YEARS IN GENERAL .

- 1___ INCREASING YEARLY
- 2___ DECREASING YEARLY
- 3___ IRREGULARLY
- 4___ STABLE
- 5___ OTHER

(12a) STATE YOUR REASON FOR PREFERRING TO MAKE YOUR LIVING EXPLOITING FORESTRY RESOURCES _____.

(13a) DO YOU KNOW OF ANY MAJOR CASE OF FLOODING IN THE AREA yes no

(b) STATE THE REASON FOR FLOODING _____.

(c) DO YOU HAVE REGULAR BUSH FIRES yes no

(d) STATE THE USUAL CAUSE _____.

(e) DO YOU HAVE SEVERE SOIL EROSION yes no

(f) STATE THE USUAL CAUSE _____.

(g) DO YOU RECOGNIZE SOIL EROSION TAKING PLACE ON YOUR FARM OR ON NEAR BY FARMS yes no not clear not applicable

(h) DO YOU HAVE REGULAR CASES OF OTHER NATURAL DISASTERS IN THE AREA yes no

(i) STATE THE CAUSES _____.

(14a) WOULD YOU LIKE TO RECEIVE PRACTICAL TRAINING IN FORESTRY MEASURES & EROSION CONTROL yes no

(B) WOULD YOU BE WILLING TO COMMIT YOURSELF TO CONTINUOUS IMPLEMENTATION OF FORESTRY DEPARTMENT (F.D.) TECHNICAL ADVICE

 yes no

(15a) LIST THE MAJOR CAUSES WHY COMMUNITY MEMBERS CONTINUE TO HAVE SO MUCH UNFULFILED BASIC NEEDS _____

(16a) HOW HAVE GOV'T. PROGRAMMES BEEN ASSISTING YOU _____

(17a) HOW HAVE NGO'S PROGRAMMES HELPED YOU _____

(17b) WHAT DO YOU LIKE ABOUT ANY OF THESE PROGRAMMES _____

(18a) WHAT SUGGESTIONS CAN YOU MAKE TO ACHIEVE BETTER FORESTRY MANAGEMENT TO YOUR COMMUNITY ORGANIZATION _____

(18b) DO YOU FEEL YOUR COMMUNITY ORGANIZATION EFFECTIVELY REPRESENTS YOU IN BENEFITING MORE FROM FORESTRY DEVELOPMENT

YES NO

(19a) IS TIME AND PLACE OF MEETING CONVINIENT TO YOU ____ ____
YES NO

(20a) DO YOU BELIEVE GOVT. AND NGO'S PROGRAMMES IN YOUR COMMUNITY ARE SUCCESFULL ____ ____
YES NO

(20b) STATE THE WAYS _____

(21a) STATE ADDITIONAL COMMENTS _____

