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**REPORT AND RECOMMENDATION OF THE PRESIDENT**

TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO THE

**REPUBLIC OF ZAMBIA**

FOR THE

**FOREST RESOURCE MANAGEMENT PROJECT**





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## CURRENCY EQUIVALENTS

Currency Unit	=	Zambian Kwacha (ZMK)
USD 1.00	=	ZMK 1 923
ZMK 1.00	=	USD 0.00052

## WEIGHTS AND MEASURES

1 kilogram (kg)	=	2.204 pounds (lb)
1 000 kg	=	1 metric tonne (t)
1 kilometre (km)	=	0.62 miles (mi)
1 metre (m)	=	1.09 yards (yd)
1 square metre (m <sup>2</sup> )	=	10.76 square feet (ft <sup>2</sup> )
1 acre (ac)	=	0.405 ha
1 hectare (ha)	=	2.47 acres

## ABBREVIATIONS AND ACRONYMS

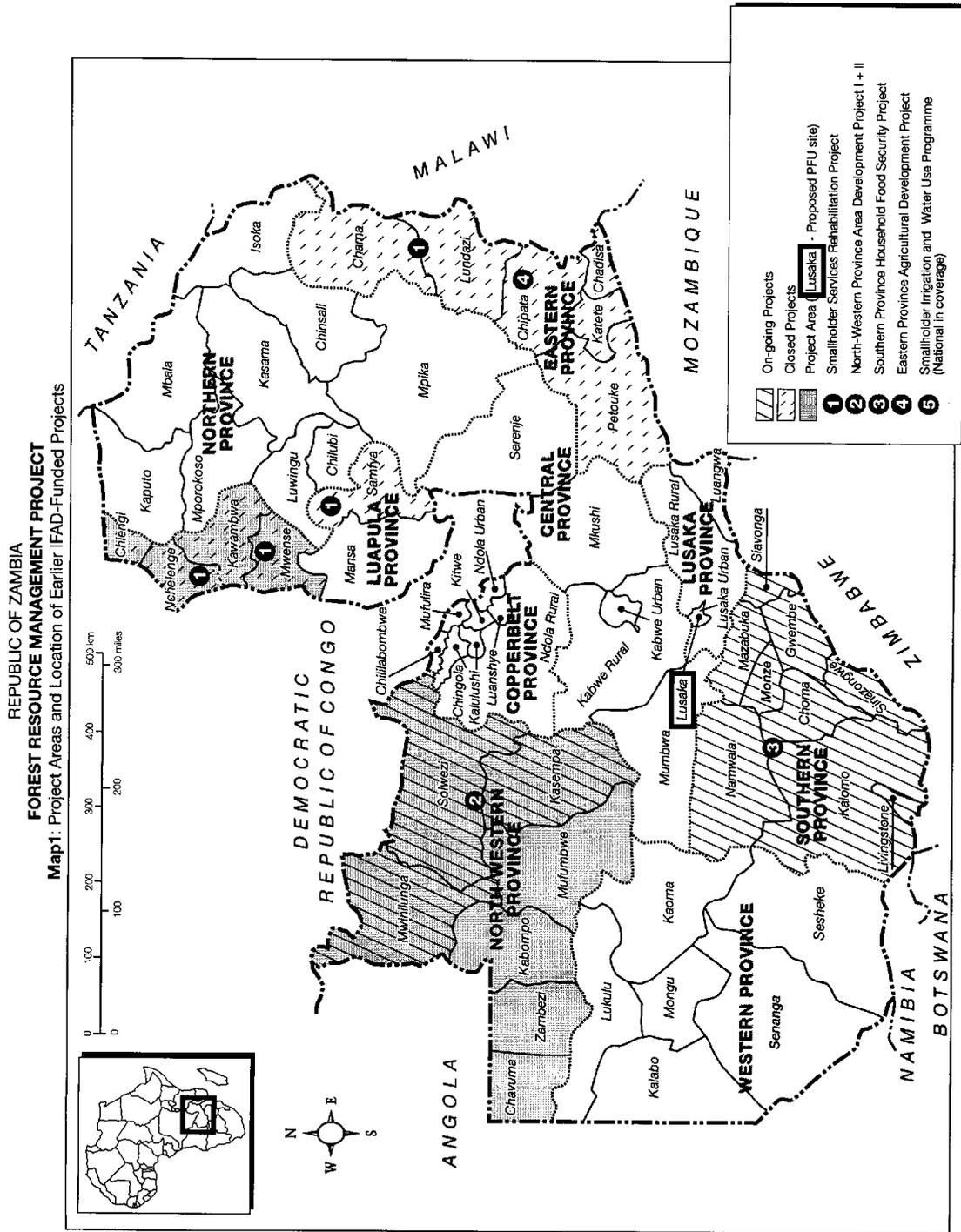
AIDS	Acquired Immunity Deficiency Syndrome
AWP/Bs	Annual Workplan and Budgets
CA-CMFRs	Contracted Agencies - Communal Management of Forest Resources
DED	German Development Service
LP	Luapula Province
MENR	Ministry of Environment and Natural Resources
MIS	Management Information System
NGOs	Non-Governmental Organizations
NWP	North-Western Province
NWPADP	North Western Province Area Development Project
PFI	Participating Financial Institutions
PFU	Project Facilitation Unit
PSC	Project Steering Committee
UNOPS	United Nations Office for Project Services
WAs	Working Areas

## GOVERNMENT OF THE REPUBLIC OF ZAMBIA

### Fiscal Year

1 January - 31 December

MAP OF THE PROJECT AREA



Source: IFAD Appraisal Report

The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.



**REPUBLIC OF ZAMBIA**  
**FOREST RESOURCE MANAGEMENT PROJECT**  
**LOAN SUMMARY**

<b>INITIATING INSTITUTION:</b>	IFAD
<b>BORROWER:</b>	Republic of Zambia
<b>EXECUTING AGENCY:</b>	Ministry of Environment and Natural Resources (MENR)
<b>TOTAL PROJECT COST:</b>	USD 15.99 million
<b>AMOUNT OF IFAD LOAN:</b>	SDR 9.15 million (equivalent to approximately USD 12.63 million)
<b>TERMS OF IFAD LOAN:</b>	40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum
<b>COFINANCIERS:</b>	German Development Service (DED) Republic of Ireland
<b>AMOUNT OF COFINANCING:</b>	DED: USD 1.69 million Republic of Ireland: USD 0.12 million
<b>CONTRIBUTION OF BORROWER:</b>	USD 0.91 million
<b>CONTRIBUTION OF BENEFICIARIES:</b>	USD 0.64 million
<b>APPRAISING INSTITUTION:</b>	IFAD
<b>COOPERATING INSTITUTION:</b>	United Nations Office for Project Services (UNOPS)



## PROJECT BRIEF

The Forest Resource Management Project will be implemented in selected communities in North-Western and Luapula provinces, which are two of the poorest provinces of Zambia. The project will secure a sustainable income base for poor rural communities dependent on forest resources, enhancing household income levels in forest areas in the medium term. This objective is intertwined with protection of the forest environment, reversing the present trend of rapid depletion.

In pursuit of these objectives, the project will aim to develop institutions and systems for the management and preservation of forest areas through communal or joint management arrangements; build-up knowledge on sustainable forest use; assist producers and groups to develop sustainable income-generating activities through improved harvesting, processing and marketing of forest products; and improve the living conditions of forest-dwelling communities by reducing their social and economic isolation through support to upgrade social infrastructure and local access roads.

Under the community development in forest areas component, the project will, on a participatory basis, assist communities in developing the institutional capacity to manage local forest resources through the following: mobilization; training; local and large-scale resource inventories; household surveys; and management planning. It will upgrade the social infrastructure, which is a high priority in the target communities, and rehabilitate feeder roads to expedite trade with target communities.

Under the sustainable income generation component, the project will provide extension and training on bee-keeping production and marketing. It will conduct participatory adaptive research into appropriate beehive technology and offer training on harvesting, replanting and processing of bamboo and rattan. Small manufacturing enterprises will be developed and better marketing arrangements for bamboo and rattan and derivative products will be promoted. The project will furnish training in sustainable harvesting, processing and marketing of timber, along with mushrooms and traditional forest products, while conducting participatory adaptive research into appropriate processing technologies for forest products. The project will improve the institutional capacity of participating financial institutions (PFIs) to extend rural credit and savings facilities; and supply funds for on-lending to groups and individuals for rural income-generating activities based on forest products.

Under the project facilitation component, the Forest Resource Management Project will facilitate implementation by contracting and supervising project implementing agencies, and generating and sharing management information required by them. It will compile periodic reports for the Government, IFAD and other sponsors, and conduct and analyse evaluation surveys.

The principal project benefits will accrue to future inhabitants of the forest areas as their resource base will be preserved. The fragile forest environments are vulnerable to increases in population pressure and attendant economic exploitation. Robust local resource management arrangements involving some 40 000 beneficiary households will provide the best chance of ensuring an income for future generations. In the medium term, the project will improve living and trade conditions for many communities through high priority investments in social infrastructure and the rehabilitation of feeder roads.

About 13 000 producers will derive increased incomes from forest products. In the bee-keeping subsector, an additional production of 2 712 t of liquid honey and 191 t of beeswax will be generated annually after project interventions are completed.

The main risks to the project lie both in a possible future diminution of the commitment of the Government to the policy and practice of joint forest management and a failure to convince communities of the need to manage forest resources. The latter will be reduced through the mindful selection of working areas (WAs) and thorough awareness creation.



**REPORT AND RECOMMENDATION OF THE PRESIDENT OF IFAD  
TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO THE  
REPUBLIC OF ZAMBIA  
FOR THE  
FOREST RESOURCE MANAGEMENT PROJECT**

I submit the following Report and Recommendation on a proposed loan to the Republic of Zambia for SDR 9.15 million (equivalent to approximately USD 12.63 million) on highly concessional terms to help finance the Forest Resource Management Project. The loan will have a term of 40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum. It will be administered by the United Nations Office for Project Services (UNOPS) as IFAD's cooperating institution.

**PART I - THE ECONOMY, SECTORAL CONTEXT AND IFAD STRATEGY<sup>1</sup>**

**A. The Economy and Agricultural Sector**

1. Zambia is a landlocked country covering an area of 752 620 km<sup>2</sup> and lies mainly on a plateau ranging in altitude from 900 to 1 500 m. Its population was about 9.0 million in 1995 and grew at an average annual rate of about 3.4% over the period 1980-93. It is divided into nine provinces and 61 districts. Zambia is one of the most urbanized countries in Africa with a non-rural population of about 43% in 1994. It is a low-income country with a GNP per capita of about USD 400 in 1995, which was 45% lower than the 1981 level (USD 720). GNP per capita declined by about 0.8% per annum over the period 1985-95.
2. Zambia's dependence on the copper and minerals industry for over 85% of its export earnings continues to cause difficulties. Production of copper and other minerals declined steadily from the early 1970s, compounded by a sharp drop in the international price of copper. The major structural shift in the economy has been a relative decline in the mining sector's share of GDP from 41% in 1965 to its current 10%, while value added from the service sector accounts for about 42% of GDP. Agriculture makes up about 18%.
3. Agriculture's relatively low share of GDP masks the widespread economic dependence on the sector. About half the population depends directly on agriculture for its livelihood. Agriculture employs two thirds of the labour force in the formal sector and remains the main employment opportunity for rural women.
4. Three categories of farmers carry out agricultural production: smallholder farmers numbering some 650 000 that cultivate 2-3 ha each with family labour and produce primarily for subsistence; emergent farmers numbering 120 000 that cultivate 5-30 ha using oxen, improved seeds and fertilizers to produce marketable surpluses; and commercial farmers numbering about 26 000 that cultivate over 30 ha each and use hired labour and oxen or tractors.
5. Commercial agriculture has been the main source of growth in the sector, while the real rate of growth in traditional (subsistence) agriculture has been stagnant. Maize is still the dominant crop, while efforts to promote other significant crops, i.e. sorghum, cassava, millet, sunflower, groundnut, sugar, tobacco, cotton, soybeans, vegetables and flowers are increasing. Following the Government's

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<sup>1</sup> See Appendix I for additional information.



withdrawal from maize purchasing, agricultural trade in remote areas has badly declined. Most recent growth in the sector is attributable to increased production of maize, sugar, wheat and horticultural crops.

6. The annual growth of the agriculture sector, averaging 3.5%, is far below its potential. Zambia has about 750 000 ha of under-utilized farmland and about 2 900 ha of smallholder land could be brought under irrigation to increase production. Past government policies were biased against agriculture, leading to capital and labour disinvestment in the sector and distorted production patterns, particularly affecting smallholders.

7. Negative macroeconomic trends have been mirrored by human development indicators. In the decade after independence, indicators improved with free primary education and health care, but two decades of economic decline and low public expenditures on social services have seen a marked deterioration in social conditions. The key indicator of under-five mortality rose from 150 to 202 deaths per 1 000 live births between the 1980s and 1992. The recent introduction of “user fees” has improved the quality of health care for those able to afford it, but has completely excluded the very poor from formal health services.

8. In 1991, almost 70% of all Zambians and 88% of rural households were living below the poverty line, with expenditures below the level of meeting basic needs. Rural poverty is more prevalent than urban poverty, and is particularly severe in remote areas. Only 8% of the households in the North-Western Province (NWP) and the Luapula Province (LP) are not classified as poor.

9. The key determinants of rural poverty are the following: lack of access to resources; geographic isolation from services and markets; lack of productive assets such as oxen; and lack of labour. In addition, women-headed households have a high number of dependants and a small labour force. Cyclical effects compound these problems: the “hungry season” before harvest coincides with the highest morbidity and peak demand for agricultural labour inputs. Many poor households find themselves in a vicious cycle in which disease and malnutrition lead to lower production, exacerbating seasonal food deficiencies.

10. The excessive promotion of maize in the past changed consumption patterns and led to its planting in inappropriate areas, which increased climatic risks. Besides compromising the stability of food supplies, this action threatened the nutritional value of the traditional diet. The increase in hybrid maize production for sale, at the expense of “women’s crops” not only gave men control over most cash income, but also increased the workload of women, who are responsible for weeding and harvesting.

## **B. Lessons Learned from Previous IFAD Experience**

11. To date, IFAD has supported six projects in Zambia, three of which are closed. The net total IFAD loan commitment is SDR 59 million (USD 82.6 million). The map indicates project locations and Appendix II presents the portfolio of IFAD loans and grants.

12. The three ongoing projects come under the umbrella of the Agricultural Sector Investment Programme. The Smallholder Services Rehabilitation Project and both phases of the North Western Province Area Development Project (NWPADP) have considerably built up IFAD’s experience in operating in parts of the project area. The mid-term evaluation reports of the Smallholder Services Rehabilitation Project and NWPADP-Phase II provide a realistic assessment of the constraints and opportunities related to production promotion, group formation and credit in marginal agro-economic conditions.

13. Significant progress was achieved on most projects in the areas of increased smallholder production and income generation, and there was a flexible response to crop disease and drought. Community facilities were constructed on a self-help basis at a reasonable cost. The results of the



research components were slow to appear, but significant achievements were made with improved varieties of traditional crops. Extension services assisted farmers in adapting to changing circumstances by promoting seed multiplication and crop diversification. However, the training and visit system was not sufficiently adapted to financial realities and differing agro-economic development potentials. In general, credit operations have proved to be unsustainable, mainly because of insufficient independence, subsidized interest rates and operational and administrative inefficiencies. Recent attempts to revive the financial service delivery under NWPADP are expected to enhance the learning process.

14. Difficulties were experienced with the management, supervision and evaluation of complex projects. Some had a large number of components that had little complementarity among, for example, extension, nutrition, credit and roads. Monitoring and evaluation units have produced some useful *ad hoc* studies, but their output has generally proved inadequate both for ongoing management and as a basis for project evaluation and planning. On occasion, a scarcity of counterpart staff and slow transfer of trained staff has inhibited the use of technical assistance to raise local capacity. The proposed project design addresses this issue through a structured build-up of local capacities.

### **C. IFAD's Strategy in Zambia**

15. In embracing the painful process of adjustment towards market-driven economic relations, the Government is evidently laying the foundations for a stable and efficient economy. The role of the state in service provision and production has decreased, intensifying reliance on the private sector. The IFAD strategic framework for Zambia is currently shaped by four main factors: (a) the limited public-sector implementation capacity in agricultural and other sectors; (b) the opening by the Government to involvement of non-governmental organizations (NGOs) in project implementation; (c) the difficulties encountered in sustaining maize-based strategies in marginal areas; and (d) the need to accelerate the process of public-sector institutional development to assume new, more normative roles.

16. Unfortunately, the poorer segments of the rural population, particularly women, are very vulnerable to the current and profound changes, and have thus far experienced more negative than positive effects. For some remote communities, market forces have not yet resulted in any potentially profitable crops or productive enterprises. The stark reality for many producers has been a reversion to subsistence modes of low input/low output production. It is well recognized that the rural poor often overexploit their environment through timber harvesting and other mining of natural resources, because of the lack of rural income-earning opportunities and the difficulty of finding urban employment.

17. IFAD's strategy focuses on strengthening the position of rural producers and empowering them to integrate themselves into the new economic environment. The classic goals of food security (through a mix of incomes and subsistence production) and improved living standards remain, but the approach will be a producer-led model of participatory local development in terms of core priority smallholder issues. Two direct consequences will be the greater use of civil-society implementing agencies and the acceptance of a dynamic and flexible approach to development interventions.

18. The major strategic thrust for IFAD in Zambia will include: (a) increased efficiency and sustainability of essential residual state services in the agriculture and natural resource sector; (b) support for the privatization of previously public or parastatal functions through sustainable devolution to organized stakeholders, including communities; (c) support in making accessible income generation opportunities through the enhancement of the commercial position of smallholders by promoting appropriate marketing arrangements; and (d) support for more effective and sustainable use of non-arable and extensive natural resources by the rural poor in order to address the challenge of difficulties in access to inputs in remote areas.



## PART II - THE PROJECT

### A. Project Area and Target Group

19. The project will be implemented in selected communities in NWP and LP. The two provinces are among the poorest in the country. Eighty per cent of the population in NWP and 83% in LP are categorized as “core poor”. Staple food shortages occur between November and February with January and February being the most difficult months. The poor in NWP and LP account for nearly 20% of the poor people in Zambia while containing only 10% of the country’s total population. The selected areas include a large proportion of the country with relatively complete forest cover on poor agricultural land.

20. The prevalence of poverty among the target group in NWP is due largely to the remoteness of the area and lack of comparative advantage in agricultural production. In LP, the two major causes of poverty are: (a) the high population densities in the valley and near the lakes, which has resulted in degradation of the forest resources and evolution of a more or less permanent crop cultivation system; and (b) the remoteness of the plateau areas where lack of access to markets is severe.

21. The beneficiaries will be poor smallholders relying on a mix of mainly subsistence agriculture and non-agricultural activities. These include male-dominated activities such as pit-sawing, carpentry, fishing, hunting, bee-keeping and crafts, and activities primarily carried out by women, such as trading, collecting non-wood forest products (caterpillars, *chikanda*, *munkoyo*, medicinal plants, etc.) and beer brewing. Using current production techniques, forest users are mining their resources and losing much of their products’ economic potential because they lack appropriate harvesting and processing skills.

22. A constraint common to both provinces is the limited agricultural productivity due to poor acidic soils, lack of draught power and productive inputs. The remoteness of the areas, a poor transport and communication infrastructure further compound the difficulty of marketing, particularly of bulky produce. The sustainable exploitation of forest products is constrained by harvesting techniques and a lack of local management structures. Furthermore, improved processing techniques for honey and beeswax, bamboo and rattan products, and a range of other traditional forest products are unknown in the project area. The burden of domestic work leaves women little opportunity to pursue additional income-earning activities. Finally, the lack of rural credit and savings mechanisms, together with the poor state of current marketing systems further constrain the lucrative exploitation of forest products.

23. In NWP, the specific production skills lacking in the rural areas are: (a) adapted and affordable bee-keeping techniques, including village-based bee-keeping accessible to women; and (b) basic bamboo and advanced rattan processing techniques. In LP, rural communities lack the skills to change from honey-hunting to bee-keeping, and they are unaware of basic rattan and advanced bamboo processing techniques. Producers in both provinces are in need of sustainable harvesting techniques for bamboo and rattan, and sustainable harvesting and preservation/processing techniques for many other forest products.

24. The project will have a coverage of about one third of the total rural population, as they are the inhabitants of the working areas (WAs) to be selected. Each WA covers about 600 to 800 households living in neighbouring villages and related forest areas. The diameter of the area will average 20 km and not exceed approximately 30 km. About 40 000 households (200 000 people) will be targeted, including some 7 800 women-headed households. Within WAs, it is expected that about 13 000 producers will select themselves for participation in project income-generating support activities with groups and marketing associations.

25. In both provinces, the vast majority of the population live below the poverty line and are thus eligible for project support. Selection criteria will be applied to identify forest communities in WAs in the first three years of implementation, beginning with one and increasing to a total of five WAs in



each district. Special emphasis will be given to the most vulnerable communities or groups in the context of the availability of forest resources and the willingness to engage in communal management. In the target group selection process, consideration will be given to:

- the more remote communities, far from markets and engaged mainly in subsistence production, with less access to health and other social facilities;
- women-headed households, a group with a consistently higher dependency ratio and insufficient land under food production due to inadequate labour supplies;
- areas with a higher incidence of malnutrition resulting in low returns-to-labour, and hence low productivity and low food availability to households; and
- avoiding areas that are very sparsely populated, close to towns or completely deforested and so devoid of forest resources.

## **B. Objectives and Scope**

26. The goal of the project is to increase the incomes of poor people who depend upon the exploitation of forest resources. It will do so both in the short term through increased productivity and more efficient marketing, and in the longer term by maintaining forest production activities at sustainable levels.

27. Therefore, the central thrust of the project will be the development of appropriate management arrangements through a learning process, whereby private-sector productive activities are encouraged through a conducive economic environment. At the same time, users are made responsible for the protection and regulation of their local forest resources. In this light, the pivotal feature of the project design is the institutional development of some effective form of communal or joint management arrangements. The aim is to build up local control and responsibility of the forest resources so that communities are motivated by self-interest to regulate economic exploitation within sustainable limits.

28. Within an appropriate communal management framework, the immediate and lasting amelioration of poverty can be tackled with the twin devices of sustainable income generation and material support to communal self-help investments in social infrastructure and road improvements. The project intends to foster genuine business activities in the private sector in rural areas, not dependent on visible or invisible subsidies. Social investments are expected to bring about significant improvements in living conditions for villagers by improvements to shared resources, such as water supplies, sanitation, health posts and education facilities. Economic and social isolation will also be reduced by making feeder roads passable during the rainy seasons.

## **C. Components**

29. The project is structured around three components: community development in forest areas; sustainable income generation; and project facilitation.

### **Community Development in Forest Areas**

30. **Communal management of forest resources.** Within each WA, the aim will be to develop communal institutional capacity to manage local forest resources. The exact development pattern will be determined by local conditions and the responsiveness of beneficiaries, but the general sequence of activities undertaken will be the following: community mobilization; training sessions in participatory management techniques; local forest inventories by and with the communities; socio-economic household surveys; and an intensive planning operation of resource management and use.



31. The tangible output will be an agreed upon forest resource management plan for each WA, based on local conditions. An equally important achievement will be the generation of permanent local institutional capacity empowered to regulate and sustain their own economic and natural resource base.

32. **Large-scale natural resource mapping.** The project will generate and distribute large-scale natural resource maps for NWP, similar to the exercise recently completed for LP. It will also support communal management resource activities.

33. **Social infrastructure development.** A contracted agency will assist target communities in identifying and upgrading social infrastructure to bring about improved living conditions through better access to basic services. It will contribute indirectly to increased incomes and assets of poor households through time-saving and better health conditions. The project will support eligible community initiatives with grants of up to 75 % of the total costs of minor infrastructure development through a community assets fund of USD 1.00 million. Local community participation amounting to at least 25% of the total activity cost will be required in the form of labour and local materials, and subsequent operation and maintenance.

34. **Feeder road rehabilitation.** In order to facilitate access to markets and social services by target communities, the project will assist communities in improving some 400 km of local feeder roads through spot improvements. Under the coordination of a contracted agency, that will administer a fund of up to USD 1.05 million, communities will be actively engaged in design, preparation, implementation and maintenance of road improvements. Communities will be expected to contribute voluntarily at least 25% of the total cost in labour and/or local materials and to share responsibility for the subsequent maintenance of the road. Labour-intensive methods and the use of small-scale community contractors will provide local income opportunities.

### **Sustainable Income Generation**

35. **Bee products.** The project will provide extension and training on bee-keeping to some 7 500 beneficiaries to raise the efficiency of production and to improve marketing arrangements. The main input will be a sequence of training courses, workshops and visits for both producers and extension staff. In each province, the field staff of the contracted agency will conduct producer-contact activities and participatory adaptive research into appropriate beehive technology as an integral part of the training project. The contracted agency will establish links with participating financial institutions (PFIs) to provide credit and facilitate the development of marketing arrangements.

36. In addition, a specialized NGO will promote village-based top-bar hive technology under the Bee-keeping Technology Promotion for Women's Groups, currently supported under NWPADP-Phase II. This subactivity will target about 300 female beneficiaries in NWP.

37. **Bamboo and rattan products.** In order to support the development of sustainable income-generating activities, the project will provide extension and training on the harvesting, replanting and processing of bamboo and rattan to some 2 500 existing and emerging producers. The project will add value within the rural areas by developing small manufacturing enterprises, establishing links with PFIs for the provision of credit and promoting better marketing arrangements for bamboo, rattan and derivative products. The project will finance adaptive research on bamboo and rattan cultivation, rattan biodiversity and pilot studies for technology transfer, while providing policy and legislative support to develop a conducive sector framework.

38. **Other forest products.** In a similar fashion, the project will supply some 2 750 beneficiaries with extension and training on sustainable harvesting, processing and marketing of timber, mushrooms, medicinal plants, caterpillars, *chikanda* and a range of other forest products. The project



will support community reforestation activities, including, through the establishment of small-scale district tree nurseries and of village nurseries and woodlots. The project will also finance participatory adaptive research into appropriate preservation and processing technologies for known and new forest products. Credit opportunities will include tools and working capital for pit-sawyers and woodworkers and the erection of a multipurpose community store for bulking produce for sale.

39. **Rural financial services development.** The project will address the deficiency of institutional credit for the production, processing and marketing of forest products in the project area by providing training and material assistance. It will develop the institutional capacity of two existing PFIs in the private sector to extend credit and savings facilities to rural producers and traders at positive interest rates. A revolving credit fund will be established in the amount of USD 600 000 to supply PFIs with sufficient funds for on-lending to groups and individuals for rural income-generating activities.

### **Project Facilitation**

40. A small temporary project facilitation unit (PFU) will be created to facilitate the implementation of project activities through the identification, contracting and supervision of implementing agencies. This will enable it to exercise a proactive and flexible coordination function. The PFU will operate a Management Information System (MIS) to generate and share information required by the project implementing agencies, communities and producer groups, and compile periodic reports for project sponsors. The PFU will also contract and analyse the baseline and project completion surveys.

### **D. Costs and Financing**

41. **Project costs.** Based on August 1998 prices and including physical and price contingencies, costs have been estimated at USD 15.99 million (see Table 1). The foreign exchange element is estimated at USD 3.72 million or 23% of total project costs. About 45% of project base costs will be spent on economic livelihood activities. Twenty-six per cent will build up the ability of community institutions to manage their forest resources, while 21% will be devoted to rural infrastructure.

42. **Financing.** The provisional arrangements for financing the project are shown by component in Table 2. The financiers of the project are the Government, the beneficiaries, Ireland, the German Development Service (DED) and IFAD. The Government will finance taxes and duties, along with 10% of incremental salaries and allowances and 100 % of the lease of office space for PFU in the amount of USD 0.91 million. The beneficiaries will finance USD 0.64 million, at least 25% of which will be devoted to social infrastructure development and feeder road rehabilitation activities. Ireland will, through a grant administered by IFAD, finance the Bee-keeping Technology Promotion for Women's Groups in the amount of USD 0.12 million. The DED will finance on a grant basis long-term technical assistance and vehicle requirements totalling USD 1.69 million. IFAD will finance the remaining project cost elements with a highly concessional loan for USD 12.63 million.

**TABLE 1: SUMMARY OF PROJECT COSTS<sup>a</sup>**  
(USD million)

Components	Local	Foreign	Total	% of Foreign Exchange	% of Base Costs
<b>A. Community development in forest areas</b>	<b>5.47</b>	<b>1.47</b>	<b>6.94</b>	<b>21</b>	<b>47</b>
- Communal management of forest resources	2.79	0.89	3.69	24	25
- Large-scale natural resource mapping	0.08	0.07	0.15	46	1
- Social infrastructure development	1.27	0.29	1.56	18	11
- Feeder road rehabilitation	1.32	0.22	1.54	15	10
<b>B. Sustainable income generation</b>	<b>5.24</b>	<b>1.53</b>	<b>6.78</b>	<b>23</b>	<b>46</b>
- Bee products	2.19	0.86	3.05	28	21
- Bamboo and rattan products	1.97	0.43	2.40	18	16
- Other forest products	0.34	0.13	0.48	29	3
- Rural financial services development	0.73	0.10	0.83	12	6
<b>C. Project facilitation</b>	<b>0.63</b>	<b>0.43</b>	<b>1.06</b>	<b>40</b>	<b>7</b>
<b>Total base costs</b>	<b>11.35</b>	<b>3.44</b>	<b>14.80</b>	<b>23</b>	<b>100</b>
Physical contingencies	0.16	0.14	0.30	47	2
Price contingencies	0.74	0.14	0.89	16	6
<b>Total project costs</b>	<b>12.26</b>	<b>3.72</b>	<b>15.99</b>	<b>23</b>	<b>108</b>

<sup>a</sup> Discrepancies in totals are due to rounding.

### E. Procurement, Disbursement, Accounts and Audit

43. Procurement for the IFAD loan will be carried out under the responsibility of PFU in accordance with IFAD's Procurement Guidelines. Implementing agencies will be responsible for their operational expenditures and the funds managed by them, using as a basis guidelines to be outlined in the project implementation manual. Each contract for goods costing USD 200 000 or more will be subject to international competitive bidding procedures. Local competitive bidding procedures will be followed for the procurement of goods costing between USD 10 000 and USD 200 000. Short-term technical assistance will be procured through international shopping; goods costing USD 10 000 or less will be acquired through local shopping procedures. Contracts above USD 50 000 will require a prior no-objection from IFAD. All procurement will be authorized only against approved annual workplan and budgets (AWP/Bs), specifying the items, procurement responsibility and methodology. Procurement from the proceeds of the DED grant will be effected by DED according to its own procedures.

44. **Disbursements and accounts.** IFAD loan proceeds will be disbursed over six years. Withdrawals from the loan account will be effected in accordance with procedures acceptable to IFAD. To facilitate project implementation, two special accounts for the IFAD loan will be established and operated by PFU: the first for operational expenditures (Special Account A) and the second for on-lending funds (Special Account B). Initial deposits will be USD 600 000 and USD 100 000, respectively. The special accounts will be replenished according to IFAD guidelines, while separate Kwacha accounts for project-related expenditure will be held by each contracted agency<sup>2</sup>. The contracted agencies will submit their replenishment requests, together with quarterly statements of accounts and physical inventory.

<sup>2</sup> The flow of funds is illustrated in Appendix VI.



**TABLE 2: FINANCING PLAN<sup>a</sup>**  
(USD '000)

	Government		Republic of Ireland		DED		IFAD		Beneficiaries		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
<b>A. Community development in forest areas</b>															
Communal management of forest resources	272.6	6.6	0	0	742.0	18	3 098.3	75.3	0	0	4 113.0	25.7	982.7	2 999.8	130.3
Large-scale natural resource mapping	17.8	10.8	0	0	0	0	147.9	89.2	0	0	165.8	1	73.6	78.3	13.8
Social infrastructure development	83.7	5.4	0	0	0	0	1 155.0	74.4	313.1	20.2	1 551.9	9.7	293.4	1 174.7	83.7
Feeder road rehabilitation	69.1	4.5	0	0	0	0	1 124.1	73.9	328.6	21.6	1 521.9	9.5	224.0	1 228.7	69.1
<b>Subtotal</b>	443.4	6	0	0	742.0	10.1	5 525.5	75.1	641.7	8.7	7 352.7	46	1 573.8	5 481.7	297.1
<b>B. Sustainable income generation</b>															
Bee products	186.7	5.5	123.3	3.6	946.6	28	2 128.8	62.9	0	0	3 385.6	21.2	942.2	2 362.1	81.2
Bamboo and rattan products	132.3	5	0	0	0	0	2 524.2	95	0	0	2 656.5	16.6	476.4	2 144.2	35.9
Other forest products	36.5	6.9	0	0	0	0	494.8	93.1	0	0	531.3	3.3	150.8	348.1	32.3
Rural financial services development	12.4	1.5	0	0	0	0	841.5	98.5	0	0	853.9	5.3	109.1	732.4	12.4
<b>Subtotal</b>	367.9	5	123.3	1.7	946.6	12.7	5 989.5	80.6	0	0	7 427.5	46.4	1 678.6	5 586.9	161.9
<b>C. Project facilitation</b>	78.3	6.5	0	0	0	0	1 136.0	93.5	0	0	1 214.4	7.6	476.6	682.1	55.6
<b>Total Disbursement</b>	908.2	5.6	123.3	0.8	1 688.6	10.6	12 633.0	79.1	641.7	4	15 994.7	100	3 729.1	11 750.8	514.6

<sup>a</sup> Discrepancies in totals are due to rounding.



45. **Accounting and audit.** The contracted agencies will be required to submit their quarterly statements within one month of closing of the quarter. The contracted agencies will prepare annual statements of accounts and physical inventory. The PFU will prepare consolidated financial statements, that will be submitted to IFAD within three months after the end of the relevant fiscal year, and which will be subject to annual independent audit carried out in accordance with acceptable auditing standards. The audit report, to be submitted to IFAD not later than six months after the close of the project's financial year, will certify the accounts and offer professional advice to improve the accounting procedures in use.

## F. Organization and Management

46. Community institutions will be the key actors in project implementation. These will include: resource management and joint forest management committees; producer groups; marketing associations; and rural infrastructure implementation committees. The chief roles of the community institutions will comprise the following: group formation and the acquisition of management skills; identification of development opportunities; planning and management of sustainable economic development activities based on forest products; interaction with technical and financial entities; mobilization of community contributions for rural infrastructure development; and acceptance of shared responsibility for maintaining improved communal infrastructure. The beneficiaries will also participate in financing rural infrastructure activities.

47. The organization and facilitation structure of the project has been devised to facilitate rather than manage project implementation by the local communities. The intention is to create the minimum institutional structure and level of external intervention consistent with the efficient delivery of advisory services and material resources. The project will be organized as a cluster of agreements with a PFU under the Zambia Forest Commission of the Ministry of Environment and Natural Resources (MENR) to facilitate project coordination. A project steering committee (PSC) chaired by the Permanent Secretary of MENR will be established at the national level. The PSC will sanction contracts with the contracted agencies, the selection of participating communities and the major decisions necessary for the implementation of the project.

48. The PFU will be comprised of five professional and six support staff, led by the project facilitator. The PFU will be responsible for a series of service contracts with competent NGOs and private-sector organizations and coordinate the efforts of various project implementing agencies, mainly through participatory review and planning processes. Administratively, the PFU will do the following: undertake procurement; control the flow of project funds; prepare reimbursement claims for IFAD; operate an effective MIS; act as liaison between the project and outside agencies; function as secretariat to PSC; and manage impact assessment work.

49. NGOs will play a crucial role in implementing the forest management, rural infrastructure and productive sub-components, and to sub-contract other institutions for specialist services of the forest resource management project. The mobilization of NGOs to provide specified services in project implementation in close cooperation with government agencies, presents novel challenges in devising robust management arrangements for a cluster of contracts.

50. **Implementation sequence.** Selected WAs will carry out field implementation, led by communal management of forest resources activities and accompanied by productive support activities. Rural infrastructure development activities will be subsequently introduced. Project support to any particular WA will be limited to three years.

51. **Reporting, supervision, monitoring and evaluation.** The MIS will be established to bring together physical and financial records with the main purpose of informing project management decisions. The MIS, operated by PFU, will be the sole channel of project monitoring material and



will form the basis of quarterly and annual reports. Within the MIS, there will be a steady flow of information on physical progress by informing project management by using objectively verifiable indicators set out in the project dynamic logical framework<sup>3</sup>. The PFU and implementing agencies' staff, along with the beneficiaries will participate in monitoring project progress and performance in particular technical areas. The PFU will be responsible for the collection of monitoring data, collation of the information and compilation of comprehensive monitoring and progress reports on a quarterly basis. At the end of the implementation period, a comprehensive project completion report will be compiled from the cumulated MIS records and annual reports. The main impact evaluation will be derived from a project-start baseline survey and a mirror-image project completion survey, both to be undertaken by an independent regional entity.

### G. Economic Justification

52. **Production, marketing and prices.** Apart from improving the availability of forest resources to sustain the target group's livelihoods, the project will directly increase smallholder incomes by raising the efficiency of harvesting, processing and marketing of forest products. The transfer of external and internal production skills, particularly for bamboo and rattan products, will be supplemented by the development of adapted production technologies, especially for bee-keepers. The project will assist beneficiaries in entering the market in a more informed and better organized way, so as to widen their marketing outreach and improve their negotiating position. The project is expected to result in an additional annual production of 2 712 t of liquid honey and 191 t of beeswax, and substantially improve, in qualitative and quantitative terms, bamboo/rattan and other forest products.

53. **Benefits and Beneficiaries.** In view of the project's emphasis on sustainability, the main beneficiaries of the project will be the future inhabitants of the forest areas, who will be able to base their livelihoods on income from local resources. The direct beneficiaries in the short term will be about 40 000 households (including 7 800 headed by women) living within the rural communities targeted by the project. They amount to at least one third of the total population in each project district. Within these broad target communities, the sustainable income generation component is expected to support individuals and groups in a variety of enterprises related to forest resources: 7 800 bee-keepers; 2 000 bamboo and 500 rattan producers; and 2 750 other producers. The total of 13 050 producers translates into assistance to more than a quarter of the households in the assisted communities.

54. **The financial and economic analysis** focused on the sustainable income generation component, using ten different production models. Bee-keepers and smallholders producing other forest products will realize significantly higher incomes under the project, and will be able to repay market-term loans for their respective investments. Returns to family labour increase considerably with the adoption of improved production and marketing techniques, earning two to three times the average rural daily wage rate. The results of the economic analysis justify the project's investments in promoting enhanced and sustainable production in bee-keeping, bamboo and rattan, and other forest products. The project has the capacity to generate an economic rate of return of 19% over a 20-year period, a remarkably stability relative to adverse factors.

### H. Risks

55. The project's main risk is that the financial imperatives of individual survival may outweigh common self-interest in the proposed establishment of community-based forest management. It is assumed that communities can be convinced of the need to manage forest resources sustainably. This risk is to be minimized through careful selection of WAs and an approach that uses forest management rather than production support as its entry point. In addition, the project depends on the Government's commitment to carrying out joint forest management through the Zambian Forest

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<sup>3</sup> See Appendix III.



Commission, based on adequate incentive mechanisms. These changes require government staff to accept reorientation to a participatory and facilitatory role and the Government to support the leading role and operational autonomy of NGOs in implementation of some sub-components.

### **I. Environmental Impact**

56. Zambian forest dwellers depend on fragile forests for their livelihoods, yet destroy it to meet today's food and energy requirements. Statistics on the actual depletion of forest resources are very sketchy at present, and do not allow detailed projections of the values lost. However, consultations with major stakeholders have confirmed the trend of continuing forest depletion. The design of the forest resource management project is driven by the imperative to protect the environment against uncontrolled economic exploitation. It is expected that project interventions will have a sizeable impact on slowing down forest depletion, if not reversing it in some locations, thereby creating a basis for continued, sustainable exploitation of the wide range of forest products upon which smallholders depend. In recognition of the fragile ecosystem in which project activities are located, the project has been classified as Category B.

### **J. Innovative Features**

57. The principal implementers will be NGOs and private-sector entities under contract with the Government. The small PFU will generate and manage these contracts, ensuring that the inputs function smoothly together. The PFU will be a supernumerary and temporary arm of MENR, whose sole purpose will be carrying out the agreed upon activities. Furthermore the project has a clear "exit route" for all interventions through the WA approach. This will ensure that authentic institutions are created and developed at the village level without need for perpetual subsidy. Improvements in the capacity of the Government and NGOs will be long-lasting, providing support to community management structures and producer groups.

## **PART III - LEGAL INSTRUMENTS AND AUTHORITY**

58. A loan agreement between the Republic of Zambia and IFAD constitutes the legal instrument for extending the proposed loan to the borrower. A summary of the important supplementary assurances included in the negotiated loan agreement is attached as an annex.

59. The Republic of Zambia is empowered under its laws to borrow from IFAD.

60. I am satisfied that the proposed loan will comply with the Agreement Establishing IFAD.

## **PART IV - RECOMMENDATION**

61. I recommend that the Executive Board approve the proposed loan in terms of the following resolution:

RESOLVED: that the Fund shall make a loan to the Republic of Zambia in various currencies in an amount equivalent to nine million one hundred and fifty thousand Special Drawing Rights (SDR 9 150 000) to mature on and prior to 1 December 2039 and to bear a service charge of three fourths of one per cent (0.75%) per annum, and to be upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.

Fawzi H. Al-Sultan  
President

## **SUMMARY OF IMPORTANT SUPPLEMENTARY ASSURANCES INCLUDED IN THE NEGOTIATED LOAN AGREEMENT**

(Loan negotiations concluded on 12 November 1999)

1. The Ministry of Environment and Natural Resources (MENR or the lead project agency) will open and thereafter maintain in a commercial bank acceptable to IFAD, or another bank as agreed by the Government of the Republic of Zambia (the "Government") and IFAD, a project account held in Kwacha (the "Project Account") for project operations. The project facilitation unit (PFU) will be fully authorized to operate the Project Account.
2. The Government will ensure that the Project Account will be opened within 90 days after the date of effectiveness of the loan agreement.
3. The Government will make budgetary allocations for each fiscal year equal to the counterpart funds called for in the AWP/B for the relevant project year, and make such allocations available to the lead project agency as required.
4. The Government will ensure that the AWP/B related to project activities in the Luapula Province is technically and financially compatible with the equivalent AWP/B, submitted by the Government for the Provincial Forestry Action Project financed by the Government of Finland.
5. Each contracted agency (i.e. those entities contracted by the lead project agency for the implementation of certain activities under the project) will be recruited by the lead project agency. The lead project agency will enter into separate contracts with each such contracted agency, which will be submitted to IFAD for its prior review and approval.
6. Within 90 days after the date of effectiveness of the loan agreement, the Government will submit the draft project implementation manual to IFAD for its comments and approval.
7. (a) Within 180 days after the date of effectiveness of the loan agreement, the Government will establish, and thereafter maintain, an appropriate management information system (MIS) of data collection, analysis and exchange to enable it to continuously monitor the project. The MIS shall bring together physical and financial records, with the main purpose of informing management of decisions on project matters. The MIS shall be the sole channel of project-monitoring material, and shall form the basis of quarterly and annual reports, annual review and planning workshops, and the resulting AWP/Bs. The Government will ensure that the MIS is set up within the PFU during the pre-project activities.
  - (b) Within 180 days after the date of effectiveness of the loan agreement, the Government will appoint an independent entity acceptable to the Fund to undertake a baseline survey in which it shall evaluate, on the basis of relevant key indicators, the impact on project beneficiaries of the completed parts of as well as the whole of the project.
  - (c) The Government will ensure that within the MIS, there shall be a steady flow of information on physical progress, including institution-building, of the project. All project staff shall be involved in monitoring the project's progress and performance in their particular areas of interest during field visits. The project monitoring officer (PMO) in the PFU shall be responsible for the orderly collection of monitoring data, collation of the information and compilation of comprehensive



monitoring and progress reports on a quarterly basis. Community institutions shall be responsible for keeping records of their activities and feeding this information into the MIS; regular review meetings shall be held by each community institution to assess progress in implementing planned activities.

8. (a) Within 90 days after the date of effectiveness of the loan agreement, the Government will appoint independent auditors selected by the Government in accordance with the procedures and criteria agreed by the Government and IFAD, to audit the accounts relating to the project.

(b) The Government will ensure that the audit report for the project will be a long-form audit report, based on financial statements that have been prepared in accordance with generally accepted accounting principles, and which adequately reflect the progress and operations of the project. The audit report will, among other things, refer to the statements of expenditure maintained under the project and the special accounts and Project Account.

9. The Government will ensure that the key project personnel are insured against health and accident risks to the extent consistent with its customary practice in respect of its national civil service.

10. The Government will ensure that women are represented in all project activities and that they receive appropriate benefit from the project outputs.

11. The following are specified as additional events of suspension of disbursements from the loan account:

- (a) the Credit By-laws, or any provision thereof, has been waived, suspended, terminated, amended or otherwise modified without the prior consent of IFAD, and IFAD has determined that such waiver, suspension, termination, amendment or modification has had, or is likely to have, a material adverse effect on the credit component; and
- (b) the project implementation manual, or any provision thereof, has been waived, suspended, terminated, amended or modified without the prior consent of IFAD, and IFAD has determined that such waiver, suspension, termination, amendment or modification has had, or is likely to have, a material adverse effect on the project.

12. The following are specified as additional conditions precedent to the disbursement of funds in respect of expenditures under the credit component of the project:

- (a) the Credit By-laws, as adopted by the project steering committee (PSC), substantially in the form so approved and certified as true and complete by the lead project agency, have been approved by IFAD; and
- (b) an agreement has been entered into between the Government and each participating financial institution (PFI) with respect to the implementation of the credit component of the project (PFI Subsidiary Agreement), and such PFI Subsidiary Agreement has been approved by IFAD.

13. The following are specified conditions precedent to the effectiveness of the loan agreement:

- (a) a PSC will be duly established;
- (b) a PFU will be duly established;
- (c) a project facilitator at the PFU will be duly appointed by the Government and approved by IFAD;



ANNEX

- (d) the Government will duly open Special Account A;
- (e) agreements will be entered into between the Government and contracted agencies (CA) with respect to the implementation of the project in the two provinces of the project area (CA contracts), and copies of such signed CA contracts, in form and substance acceptable to IFAD and certified as true and complete by a competent officer of the Government, will be delivered to IFAD;
- (f) the AWP/B for project year 1 will be prepared and approved by the PSC, IFAD and the cooperating institution;
- (g) the loan agreement will have been duly signed, and the signature and performance thereof by the Government will have been duly authorized and ratified by all necessary administrative and governmental action; and
- (h) a favourable legal opinion, issued by the Attorney General or other legal counsel approved by IFAD, in form and substance acceptable to IFAD, will have been delivered by the Government to IFAD.





## APPENDIX I

## COUNTRY DATA

## ZAMBIA

<b>Land area (km<sup>2</sup> thousand) 1996 1/</b>	<b>743</b>	<b>GNP per capita (USD) 1997 2/</b>	<b>370</b>
<b>Total population (million) 1997 1/</b>	<b>9.4</b>	<b>Average annual real rate of growth of GNP per capita, 1990-97 2/</b>	<b>-0.9</b>
<b>Population density (people per km<sup>2</sup>) 1996 1/</b>	<b>12</b>	<b>Average annual rate of inflation, 1990-97 2/</b>	<b>72.4</b>
<b>Local currency</b>	<b>Kwacha (ZMK)</b>	<b>Exchange rate: USD 1 =</b>	<b>ZMK 1 952</b>
<b>Social Indicators</b>		<b>Economic Indicators</b>	
Population (average annual population growth rate) 1980-97 1/	2.9	GDP (USD million) 1997 1/	3 865
Crude birth rate (per thousand people) 1997 1/	42	Average annual rate of growth of GDP 1/ 1980-90	1.0
Crude death rate (per thousand people) 1997 1/	19	1990-97	1.0
Infant mortality rate (per thousand live births) 1997 1/	113	Sectoral distribution of GDP, 1997 1/	
Life expectancy at birth (years) 1997 1/	43	% agriculture	16
Number of rural poor (million) (approximate) 1/	4.7	% industry	31
Poor as % of total rural population 1/	88.0	% manufacturing	12
Total labour force (million) 1997 1/	4.0	% services	52
Female labour force as % of total, 1997 1/	45	Consumption, 1997 1/	
<b>Education</b>		General government consumption (as % of GDP)	12
Primary school gross enrolment (% of relevant age group) 1996 1/	89	Private consumption (as % of GDP)	78
Adult literacy rate (% of total population) 1995 3/	78	Gross domestic savings (as % of GDP)	10
<b>Nutrition</b>		<b>Balance of Payments (USD million)</b>	
Daily calorie supply per capita, 1995 3/	1 915	Merchandise exports, 1997 1/	1 178
Index of daily calorie supply per capita (industrial countries=100) 1995 3/	61	Merchandise imports, 1997 1/	1 070
Prevalence of child malnutrition (height for age % of children under 5) 1992-97 1/	42	Balance of merchandise trade	108
Prevalence of child malnutrition (weight for age % of children under 5) 1992-97 1/	24	Current account balances (USD million)	
<b>Health</b>		before official transfers, 1997 1/	- 402
Health expenditure, total (as % of GDP) 1990-97 1/	3.3	after official transfers, 1997 1/	n.a.
Physicians (per thousand people) 1990-97 1/	0.07	Foreign direct investment, 1997 1/	70
Percentage population without access to safe water 1990-96 3/	73	<b>Government Finance</b>	
Percentage population without access to health services 1990-95 3/	25	Overall budget surplus/deficit (including grants) (as % of GDP) 1996 1/	0.7
Percentage population without access to sanitation 1990-96 3/	36	Total expenditure (% of GDP) 1996 1/	21.4
<b>Agriculture and Food</b>		Total external debt (USD million) 1997 1/	6 758
Food imports as percentage of total merchandise imports 1997 1/	n.a.	Present value of debt (as % of GNP) 1997 1/	138
Fertilizer consumption (hundreds of grams per ha of arable land) 1995-97 1/	96	Total debt service (% of exports of goods and services) 1997 1/	19.9
Food production index (1989-91=100) 1995-97 1/	95.6	Nominal lending rate of banks, 1997 1/	46.7
<b>Land Use</b>		Nominal deposit rate of banks, 1997 1/	34.5
Arable land as % of land area, 1996 1/	7.1		
Forest area (km <sup>2</sup> thousand) 1995 1/	314		
Forest area as % of total land area, 1995 1/	42.2		
Irrigated land as % of cropland, 1994-96 1/	0.9		

n.a. not available.

Figures in italics indicate data that are for years or periods other than those specified.

1/ World Bank, *World Development Report*, 1999.2/ World Bank, *Atlas*, 1999.3/ UNDP, *Human Development Report*, 1998.

## PREVIOUS IFAD LOANS IN ZAMBIA

Project Name	Initiating Institution	Cooperating Institution	Lending Terms	Board Approval	Loan Effectiveness	Current Closing Date	Loan/Grant Acronym	Denominated Currency	Approved Loan/Grant Amount	Disbursement (as % of approved amount)
Eastern Province Agricultural Development Project	World Bank: IBRD	World Bank: IBRD	I	22 Apr 81	11 Mar 82	30 Jun 88	L - I - 66 - ZA	SDR	9 000 000	47.8%
North Western Province Area Development Project	IFAD	World Bank: IDA	HC	14 Sep 82	03 Mar 83	31 Jul 92	L - I - 104 - ZA	SDR	11 950 000	99.0%
Smallholder Services Rehabilitation Project	IFAD	World Bank: IDA	HC	09 Sep 87	15 Apr 88	31 Dec 95	G - S - 7 - ZA	USD	71 000	80.3%
Smallholder Services Rehabilitation Project	IFAD	World Bank: IDA	HC	09 Sep 87	15 Apr 88	31 Dec 95	L - I - 206 - ZA	SDR	9 100 000	99.2%
Smallholder Services Rehabilitation Project	IFAD	World Bank: IDA	HC	09 Sep 87	15 Apr 88	31 Dec 95	L - S - 7 - ZA	SDR	7 100 000	96.6%
Northwestern Province Area Development Project - Phase II	IFAD	UNOPS	HC	11 Dec 91	26 Jun 92	31 Dec 00	G - S - 27 - ZA	USD	100 000	98.8%
Northwestern Province Area Development Project - Phase II	IFAD	UNOPS	HC	11 Dec 91	26 Jun 92	31 Dec 00	L - I - 293 - ZA	SDR	9 250 000	97.3%
Northwestern Province Area Development Project - Phase II	IFAD	UNOPS	HC	11 Dec 91	26 Jun 92	31 Dec 00	L - S - 28 - ZA	SDR	2 750 000	36.5%
Southern Province Household Food Security Programme	IFAD	UNOPS	HC	05 Dec 94	28 Mar 95	31 Dec 01	L - I - 368 - ZM	SDR	10 400 000	49.6%
Smallholder Irrigation and Water Use Programme	World Bank: IDA	UNOPS	HC	12 Apr 95	09 Apr 96	31 Dec 00	L - I - 377 - ZM	SDR	4 300 000	34.4%

Note: HC = highly concessional  
I = intermediate



## DYNAMIC LOGICAL FRAMEWORK

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions and Risks
<b>Overall Development Objective</b>			
<ul style="list-style-type: none"> <li>Sustainable income base for poor rural households dependent on fragile forest resources.</li> </ul>	Household income levels in forest areas in the medium term.	Baseline survey, Project completion survey (and post-project evaluation).	
<b>Project Purposes</b>			
<ul style="list-style-type: none"> <li>Development of robust institutional arrangements that regulate overall and local forest uses to enhance and conserve the environment.</li> </ul>	Effective management of forest resources. Reduced environmental degradation.	GRZ joint forest management reports. Large-scale inventories over time.	Commitment to joint forest management carried into practice by ZFC, with adequate incentive mechanisms.
<ul style="list-style-type: none"> <li>Build-up of knowledge about existing forest resources and appropriate harvesting and production technologies.</li> </ul>	Large (NWP) and small-scale inventories. Improved technologies adopted.	Publication of inventories. GRZ/NGO reports.	
<ul style="list-style-type: none"> <li>Immediate increase in incomes and assets of poor households dependent on forest resources.</li> </ul>	Household cash incomes. Savings.	Project completion survey. Group and PFI records.	
<ul style="list-style-type: none"> <li>Improvement in living conditions for selected rural communities through better access to basic services.</li> </ul>	Quality of education services, health services, water supplies and sanitation available to rural communities.	Project completion survey.	
<b>Project Results</b>			
<b>1. Community Development in Forest Areas</b>			
<ul style="list-style-type: none"> <li>Communities in about 55 working areas enabled to manage and sustain their shared forest resources.</li> </ul>	Communities actively managing local forest resources. GRZ/NGO capacity in participatory forest resource management.	GRZ reports on joint forest management and MIS.	Communities can be convinced of need to manage forest resources. GRZ staff accepts reorientation to participatory and facilitatory role.
<ul style="list-style-type: none"> <li>Large-scale natural resource maps for NWP available for planning purposes.</li> </ul>	NWP large-scale natural resource map.	Availability of map.	
<ul style="list-style-type: none"> <li>New or rehabilitated social infrastructure for primary schools, health posts, communal water supplies and sanitation.</li> </ul>	Functional availability of village infrastructure for intended purposes.	GRZ line department reports and MIS.	Support forthcoming from GRZ line departments to operate and maintain additional services.
<ul style="list-style-type: none"> <li>Rehabilitated feeder roads, (about 280 km in NWP and 120 km in LP), to expedite marketing.</li> </ul>	State of rehabilitated roads.	District council reports and MIS.	DCs co-operate with selection of spot improvements and commitment to maintenance.
<b>2. Sustainable Income Generation</b>			
<ul style="list-style-type: none"> <li>Enhanced sustainable production and marketing of bee products.</li> </ul>	Marketed bee products. GRZ/NGO production facilitation and adaptive research capacity.	MIS. Mid-term review.	Potential private-sector demand for increased quantities of quality bee products.





<ul style="list-style-type: none"> <li>Enhanced sustainable production and marketing of bamboo, rattan and derivative products.</li> </ul>	Marketed bamboo and rattan products. GRZ/NGO facilitation and small enterprise development capacity.	MIS. Mid-term review.	
<ul style="list-style-type: none"> <li>Enhanced sustainable production and marketing of other known and new forest products.</li> </ul>	Marketed other forest products. GRZ/NGO facilitation and adaptive research capacity.	MIS. Mid-term review.	Potential private-sector demand for increased quantities of other forest products.
<ul style="list-style-type: none"> <li>Permanent access to appropriate rural financial services to support productive activities.</li> </ul>	Demand for credit met. Savings mobilized.	PFI records and MIS. Group records and MIS.	PFIs committed to working in project areas and free from political interference.
<b>3. Project Facilitation</b> <ul style="list-style-type: none"> <li>Effective and responsive contract management and coordination of project implementation.</li> </ul>	Resolution of problems arising. Refinements to approach with experience. Participation of implementing agencies in planning.	Steering committee minutes, PFU correspondence, supervision reports. Regular beneficiary consultations and review and planning workshops.	GRZ support for leading role of NGOs in implementation of some sub-components.
<ul style="list-style-type: none"> <li>Increased understanding of better development management techniques.</li> </ul>	Two doctoral dissertations on selected management aspects.	Published dissertations.	
<ul style="list-style-type: none"> <li>Reliable and punctual management information and reports available to project decision-makers and sponsors.</li> </ul>	Flow of management information. Mid-term review, project completion report and other project reports.	Records of decision-making. Published reports.	
<ul style="list-style-type: none"> <li>Objective evaluation of the overall impact of the project on incomes, the environment and the development process.</li> </ul>	Baseline survey. Project completion survey.	Published reports.	
<b>Project Activities</b>		<b>Inputs and Budget</b>	<b>USD million</b>
<b>1. Community Development in Forest Areas</b> <ul style="list-style-type: none"> <li>Develop communal institutional capacity to manage local forest resources, through mobilization, training, local resource inventories and mapping, household surveys and management planning.</li> </ul>	Communities mobilized; training conducted; local resource inventories and maps compiled; household surveys completed; and forest resource management plans agreed.	Rural infrastructure Vehicles Equipment and materials Technical assistance Studies and Workshops	2.73 0.75 0.33 2.30 0.84
<ul style="list-style-type: none"> <li>Generate and distribute large-scale natural resource maps for NWP by satellite imagery, ground truthing, data entry, duplication and promotion.</li> </ul>	Satellite imagery processed; ground truthing completed; data entered; NWP large-scale natural resource maps completed and distributed to users.	Training Contractual Services Credit	1.16 1.84 0.60
<ul style="list-style-type: none"> <li>Upgrade social infrastructure given high priority by target communities.</li> </ul>	Needs identified by communities and eligible work done on participatory basis.	Subtotal Investment Costs	10.54
<ul style="list-style-type: none"> <li>Rehabilitate feeder roads to expedite trade with target communities.</li> </ul>	Critical transport problems identified and eligible work done on participatory basis.	Salaries and allowances Operating and maintenance	3.39 0.87

<p><b>2. Sustainable Income Generation</b></p> <ul style="list-style-type: none"> <li>• Provide extension and training on beekeeping, to raise efficiency of production and to improve marketing arrangements.</li> <li>• Conduct participatory adaptive research into appropriate beehive technology.</li> </ul>	<p>Advice and training provided to producers; and NGO and GRZ staff trained in technical aspects and facilitation approach.</p> <p>Adaptive research carried out in a community context.</p>	<p>Subtotal Recurrent Costs</p> <p>Total base costs</p> <p>Contingencies</p> <p>Total project costs</p>	<p>4.26</p> <p>14.80</p> <p>1.19</p> <p>15.99</p>
<ul style="list-style-type: none"> <li>• Provide extension and training on harvesting, replanting and processing of bamboo and rattan.</li> <li>• Develop small manufacturing enterprises based on bamboo and rattan.</li> <li>• Promote better marketing arrangements for bamboo, rattan and derivative products.</li> </ul>	<p>Technical advice and training provided to producers and facilitation staff.</p> <p>Small groups set up and trained in semi-manufacturing techniques.</p> <p>Marketing advice offered and links established with commercial entities.</p>		
<ul style="list-style-type: none"> <li>• Provide extension and training on sustainable harvesting, processing and marketing of timber, mushrooms, medicinal plants, caterpillars, <i>chikanda</i> and other forest products.</li> <li>• Conduct participatory adaptive research into appropriate preservation and processing technologies for known and new forest products.</li> </ul>	<p>Advice and training provided to producers; marketing arrangements developed; and NGO and GRZ staff trained in technical aspects and facilitation approach.</p> <p>Forest inventories screened for resources with market potential; and adaptive research carried out in community context.</p>		
<ul style="list-style-type: none"> <li>• Develop institutional capacity of participating financial intermediaries to extend credit and savings facilities to rural producers and traders.</li> <li>• Supply sufficient funds for on-lending to groups and individuals for rural income-generating activities based on forest products.</li> </ul>	<p>Lending procedures developed; staff trained; equipment and transport in place; and facilities publicized.</p> <p>Pipeline of credit funds established; groups mobilized for borrowing; loans for productive purposes disbursed and recovered; and savings mobilized.</p>		
<p><b>3. Project Facilitation</b></p> <ul style="list-style-type: none"> <li>• Facilitate the implementation of project components through the identification, contracting and supervision of IAs, and a proactive and flexible coordination function.</li> </ul>	<p>Contracts concluded for provision of goods and services; performance monitoring; liaison between stakeholders; and refinements to project design suggested.</p>		
<ul style="list-style-type: none"> <li>• Two doctoral dissertations on management aspects.</li> </ul>	<p>Doctoral dissertations published.</p>		
<ul style="list-style-type: none"> <li>• Generate and share management information required by IAs, and compile periodic physical and financial reports for GRZ, IFAD and other sponsors.</li> </ul>	<p>Pertinent project management information exchanged; regular and special reports generated; accounts and audits compiled; and Mid-term review and project completion report conducted.</p>		
<ul style="list-style-type: none"> <li>• Conduct, analyse and compare baseline and project completion surveys.</li> </ul>	<p>Baseline survey and project completion survey concluded.</p>		



**KEY PROJECT FACTORS**

<b>Financing</b>	<b>USD millions</b>
IFAD	12.633
Republic of Ireland	0.123
DED	1.689
The Government	0.908
Beneficiaries	0.641
<b>Total</b>	<b>15.995</b>

<b>Costs</b>	<b>USD millions</b>
Community development in forest areas	7.365
Sustainable income generation	7.343
Project facilitation	1.283
<b>Total</b>	<b>15.995</b>

<b>Beneficiaries</b>	<b>Total</b>
Forest management beneficiaries	<b>40 000</b>
Of which: production beneficiaries	13 050
Bee-keepers	7 800
Bamboo and rattan producers	2 500
Other producers	2 750
Cost per beneficiary (USD)	400

<b>Incremental Production</b>	<b>tons</b>
Honey	2 712
Beeswax	191

<b>Annual Incomes with Project</b>	<b>USD/person</b>
Bark hive bee-keeping	215
Multi-chamber fixed-comb hive bee-keeping	126
Top-bar hive bee-keeping	39
Pit-sawing	246
Bamboo basket production	373
Harvesting and semi-processing of rattan	235
Rattan furniture making	181
Mushroom collection and marketing	23

<b>Economic Rates of Return</b>	<b>%</b>
Overall project base case	<b>19</b>
Benefits decrease by 10 %	18
Costs increase by 10 %	18
Benefits lag by one year	16



## COSTS AND FINANCING

### Expenditure Accounts by Components – Base Costs (USD '000)

	Community Development in Forest Areas				Sustainable Income Generation					Total	Physical Contingencies		
	Communal Management of Forest Resources	Large-scale Natural Resource Mapping	Social Infrastructure Development	Feeder Road Rehabilitation	Bee Products	Bamboo and Rattan Products	Other Forest Products	Rural Financial Services Development	Project Facilitation		%	Amount	
<b>I. Investment Costs</b>													
A. Rural infrastructure	-	-	1 334.0	1 400.0	-	-	-	-	-	2 734.0	-	-	
B. Vehicles	216.6	-	84.0	-	145.9	61.1	98.7	54.4	84.6	745.5	5.0	37.2	
C. Equipment and material	76.3	49.0	10.1	-	72.4	32.6	33.5	12.0	41.4	327.4	5.0	16.7	
D. Technical assistance	668.0	42.0	-	-	795.6	340.0	-	56.0	395.0	2 296.6	5.0	114.8	
E. Studies and workshops	435.9	-	-	-	22.0	68.3	129.0	-	182.5	837.8	4.0	33.8	
F. Training	132.0	-	-	-	330.2	434.7	150.0	110.8	6.9	1 164.8	5.0	58.2	
G. Contractual services	530.5	-	133.4	140.0	508.2	523.9	-	-	-	1 836.1	-	-	
H. Credit	-	-	-	-	-	-	-	600.0	-	600.0	-	-	
<b>Total Investment Costs</b>	2 059.4	91.0	1 561.5	1 540.0	1 874.4	1 460.8	411.4	833.2	710.5	10 542.5	2.5	260.5	
<b>II. Recurrent Costs</b>													
A. Salaries and allowances	1 267.2	36.4	-	-	987.9	858.9	37.8	-	202.7	3 390.9	-	-	
B. Operating and maintenance	369.2	22.7	-	-	195.1	89.8	34.5	-	155.4	867.0	5.0	43.3	
<b>Total Recurrent Costs</b>	1 636.5	59.1	-	-	1 183.0	948.7	72.3	-	358.1	4 258.0	1.0	43.3	
<b>Total BASELINE COSTS</b>	3 696.0	150.1	1 561.5	1 540.0	3 057.5	2 409.6	483.8	833.2	1 068.7	14 800.5	2.1	303.8	
Physical contingencies	94.9	5.6	4.7	-	78.0	49.5	16.0	11.6	43.3	303.8	-	-	
Price contingencies	322.1	10.0	14 264	18.0	250.0	197.4	31.5	9.1	102.3	890.2	2.9	25.7	
<b>Total PROJECT COSTS</b>	4 113.0	165.8	1 551.9	1 521.9	3 385.6	2 656.5	531.3	853.9	1 214.4	15 994.7	2.1	329.6	
Taxes	130.3	13.8	83.7	69.1	81.2	35.9	32.3	12.4	55.6	514.6	3.5	18.0	
Foreign Exchange	982.7	73.6	293.4	224.0	942.2	476.4	150.8	109.1	476.6	3 729.1	4.0	148.5	

## DISBURSEMENT ACCOUNTS BY FINANCIERS (USD '000)

	Government		Republic of Ireland		DED		IFAD		Beneficiaries		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
Vehicles, equipment and material	203.2	17.5	49.6	4.3	98.4	8.5	810.2	69.8	-	-	1 161.5	7.3	888.0	70.2	203.2
Training, technical assistance, studies and workshops	-	-	-	-	1 590.1	32.4	3 322.1	67.6	-	-	4 912.3	30.7	2 003.9	2 908.4	-
Contractual services	-	-	-	-	-	-	1 813.2	100.0	-	-	1 813.2	11.3	183.6	1 629.6	-
Credit	-	-	-	-	-	-	591.6	100.0	-	-	591.6	3.7	-	591.6	-
Rural infrastructure	135.1	5.0	-	-	-	-	1 925.2	71.3	641.7	23.8	2 702.1	16.9	410.1	2 156.9	135.1
Operating costs	551.5	11.5	73.7	1.5	-	-	4 188.3	87.0	-	-	4 813.6	30.1	243.4	4 393.9	176.2
<b>Total</b>	<b>908.2</b>	<b>5.6</b>	<b>123.3</b>	<b>0.8</b>	<b>1 688.6</b>	<b>10.6</b>	<b>12 633.0</b>	<b>79.1</b>	<b>641.7</b>	<b>4.0</b>	<b>15 994.7</b>	<b>100.0</b>	<b>3 729.1</b>	<b>11 750.8</b>	<b>514.6</b>





## ORGANIZATION AND MANAGEMENT

### Project Coordination

1. The organization of the Project has been devised to facilitate rather than manage project implementation by local communities. The temporary project organization created to facilitate build-up of personal and institutional capacity will be sufficiently flexible to respond to changing circumstances and the expressed requirements of beneficiaries. Such a process approach contrasts with project designs that place temporary project staff in the role of implementers and executive managers.
2. The project will be organized as a cluster of agreements with a small PFU acting as contract managing agent under the Zambia Forest Commission of MENR, and as a regular channel of communication between the Government, IFAD and the implementing agencies. The proposed overall facilitation structure for the project is given in Figure 2 below.
3. To facilitate project coordination, a PSC will be established at the national level. Under the chairmanship of the permanent secretary of MENR, the PSC will meet at least every three months. Its chief functions will be to:
  - provide overall conceptual and policy guidance to the project;
  - review reports from PFU on project progress and performance;
  - approve AWP/Bs on behalf of the Government and submit AWP/Bs to IFAD for approval;
  - sanction contracts select communities for project implementation, and engage and deploy technical assistance;
  - approve individual rural infrastructure proposals;
  - oversee project progress and resolve implementation problems; and
  - report on progress to IFAD and other project sponsors on a quarterly and annual basis.
4. In view of their critical role in project implementation, representatives of the contracted agencies appointed for executing the communal management of forest resources activities in NWP and LP and the contracted agency appointed for implementing the rural infrastructure development activities will be full members of PSC. Similarly, the PFIs will have one representative on PSC.

### Project Facilitation

5. The PSC will be serviced by a PFU for the day-to-day implementation of the project, established by MENR in a temporary and supernumerary capacity. The unit will comprise five professional and six support staff, led by the project facilitator.
6. The PFU will be responsible for a series of service contracts with competent NGOs and private-sector organizations and coordinating the efforts of the various implementing agencies, essentially through the participatory review and planning processes. It will focus on the refinement and consolidation of the project's AWP/Bs.
7. Administratively, the PFU will do the following: undertake procurement; control the flow of project funds to and from FRMP accounts; prepare reimbursement claims for IFAD; operate an orderly MIS; act as liaison between the project and outside agencies; function as secretariat to the PSC; and manage impact assessment work.



8. **Field-level coordination.** Within the operational WAs, project activities will be coordinated through NGO Contracted Agencies - Communal Management of Forest Resources (CA-CMFRs). The coordination of field-level implementation will entail, in particular, identifying of WAs and collaborating with the following: ZFC district offices; the NGO Contracted Agency - Rural Infrastructure Development; PFIs; institutions sub-contracted by the CA-CMFRs for the implementation of the productive sustainable income generation sub-components; and the independent regional entity charged with project evaluation. A particular aspect of field-level coordination will be the timing of the sequence of interventions by the various project implementing agencies in a specific WA.

### **Project Implementation**

9. At the national level, the lead agency for the project will be the Ministry of Environment and Natural Resources which will, through the FFU, be responsible for project implementation and supervision.

10. The three main implementing agencies will be NGOs contracted to implement the communal management of forest resources and the productive sustainable income generation sub-components. They will subcontract other NGOs and public or private entities for specialist services. Separate CA-CMFRs will be contracted for LP and NWP. They will coordinate field-level implementation in WAs, including both the communal management of forest resources and productive activities with the assistance of local, specialized institutions namely: the Kangonga Production Centre (Bamboo and Rattan) and Muzama Crafts (forest inventories). The contracted agencies will implement the social infrastructure development and feeder road rehabilitation sub-components.

11. NGOs will be responsible for providing staff training in participatory development processes; mobilizing communities; developing and training community institutions and their leaders; identifying producers that utilize forest resources; providing advice, training and support to producer groups; developing the craft sector; promoting marketing associations; supporting the establishment of community-based social infrastructure development committees; monitoring project progress in the community; and offering specialist technical and managerial inputs.

12. At the district level, the project will supplement the Government's programmes in and beyond the selected WAs, cooperating with and involving any technical staff (ZFC and others) with local responsibilities on the basis of agreements reached in each district. In this context, individual government officers will be given training and personal career development opportunities.

13. An appropriate financial institution will be contracted in each province to extend access to credit to the target areas.

14. The PFU will contract various private sector agencies to provide training and other specialist technical inputs for small-scale adaptive research activities, socio-economic surveys and project evaluation. The project will also draw on the expertise of international organizations to provide guidance and technical assistance.

15. Community institutions are resource management and joint forest management committees, producer groups, marketing associations and rural infrastructure implementation committees. They will be the key actors in project implementation. The roles of the community institutions will include: identification of development opportunities; planning and management of sustainable economic development activities based on forest products; interaction with technical and financial entities; mobilization of community labour and materials for rural infrastructure development; provision of mutual technical support; and acceptance of shared responsibility for maintenance of improved communal infrastructure.



## **Annual Work Planning and Budgeting**

16. An important part of the process approach adopted in project design is to emphasize flexible response to experience, particularly in the early years. Annual review and planning workshops will be held in each province to provide an opportunity for project beneficiaries and implementers to review interactively project performance, learn from experience and incorporate improvements into the implementation of the project. Relevant information will be made available from MIS on progress in the previous year, and discussion will be invited on the outline of AWP/Bs prepared by PFU. IFAD supervision missions will coincide with the annual workshops.

17. AWP/Bs will be developed by each implementing agencies in consultation with the staff and communities in the participating districts. They will be sent to PFU for consolidation into the overall AWP/B. The PSC will submit the consolidated AWP/Bs to IFAD for approval. The project's AWP/B will be the sole authority for spending during the project year.

## **Monitoring, Evaluation and Review**

18. The project MIS will be established by PFU to provide a comprehensive system of data collection, analysis and exchange. The MIS will bring together physical and financial records with the main purpose of informing management decisions. Quantitative measures of progress will be supplemented with qualitative information related to the acquisition of personal and shared skills, group behaviour and attitudes. The MIS will be the sole channel of project monitoring material and will form the basis of quarterly and annual reports, the annual review and planning workshops and the resulting AWP/Bs.

19. Project monitoring will be an integral part of the project facilitation mechanism. Within MIS, there will be a steady flow of information on physical progress. All staff will be involved in monitoring the project progress and performance in their particular areas of interest during field visits. The need to submit regular monitoring data to PFU will be an integral part of the contracts with implementing agencies, and will be a requirement for the inclusion of individual AWP/Bs. The project monitoring officer in PFU will be responsible for the collection of monitoring data, collation of information and compilation of comprehensive monitoring and progress reports on a quarterly basis.

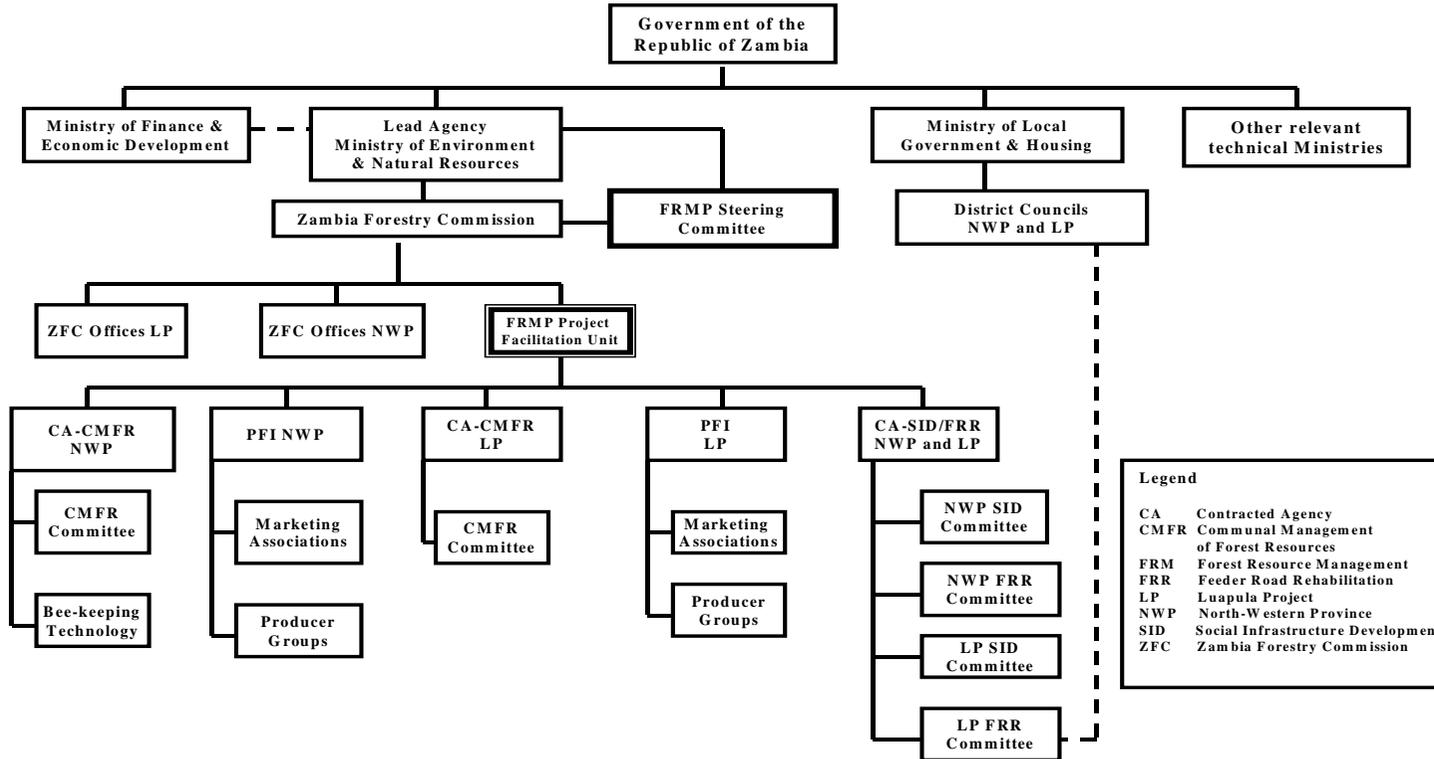
20. A limited array of key monitoring indicators will be selected for each of the project's components. Wherever relevant, gender-specific data will be collected. Monitoring will be directed to inform project management using the objectively verifiable indicators of project results set out in the dynamic logical framework (see Appendix III).

21. Beneficiary participation in the project monitoring will be sought through three mechanisms. First, community institutions will be responsible for keeping records on their activities and feeding this information into MIS. Second, regular review meetings will be held by each community institution to assess implementation progress. Finally, annual review and planning workshops will be conducted.

22. Feedback of monitoring information to participants and exchange between provinces and districts is an important feature of the project. Quarterly and annual progress monitoring reports will be prepared for PSC for onward transmission to the Government, IFAD and other project sponsors. At the end of the implementation period, a comprehensive project completion report will be compiled from the cumulated MIS records and annual reports.



**FIGURE 2: FRMP FACILITATION STRUCTURE**





## FINANCIAL AND ECONOMIC ANALYSIS

1. **Financial analysis.** The basic parameters of the various production systems supported under the project were reviewed, and ten activity models for the predominant enterprises involving forest products were constructed. All models use prices in local currency at real values (August 1998). The current pricing regime for agricultural and other inputs and outputs is based on a free market system. Prices can vary reflecting supply and demand, current availability, remoteness and other factors.
2. It is commonplace in the project area to hire unskilled labour for agricultural or off-farm activities in times of peak demand. Payment is either in cash or kind. The average wage that is paid currently stands at around ZMK 600 to 1 200. Although most activities involving forest products usually take place in the non-agricultural season, some minor overlaps with agricultural labour demands can occur. It is assumed that hired labour will be able to fill this gap.
3. Rural households exploiting forest resources are currently not taxed except for pit-sawyers and other users of primary timber. These are charged a licence fee, which enters the analysis at its current rate.
4. Both the bee-keeping and the other forest products production models represent viable enterprises under the assumptions used in the calculations. Returns to family labour under the existing production systems are usually higher than the estimated daily rural wage rate and increase considerably in the “with project” situations. Furthermore, producers will be in a position to repay investment and working capital loans which will be extended to them at market rates. Since the return both to labour and the investment are favourable, the adoption of the proposed changes in the production process can be recommended.
5. The bee-keeping models indicate that, notwithstanding the high honey and wax output of movable comb hives, the bark hives production system (both traditional and improved) is more attractive than top-bar or multichamber fixed-comb hive systems, due to higher returns to labour. In addition, the risk of investment into improved bark hive bee-keeping is buffered by the existing low-cost production. Nonetheless, the movable comb hive and multichamber fixed-comb hive offer attractive returns to capital, provided pilot apiaries can confirm the validity of the assumptions.
6. **Economic analysis.** The main benefits of the project will accrue to the Zambian economy in terms of the reduction of ecological degradation in remote forest areas. This is the current resource most seriously threatened by unsustainable exploitation and non-reversible degradation. These threats are particularly present in LP, where higher population pressure has already led to visible deforestation along the Luapula valley. But the threats are also real in the NWP where the needs of a growing population have forced communities to penetrate to remote areas and cultivate land at increasing distances from their homesteads. Zambian forest dwellers depend on the fragile forests for their livelihoods, yet destroy it to meet today’s food and energy requirements.
7. The community development in forest areas component is designed to address the above conditions through the creation of community-based institutions that will be able to manage and control the exploitation of their forests in a responsible, sustainable way. The medium-term benefits of these efforts will be felt in the project areas through the continued presence of natural forests able to support the local inhabitants in meeting their daily requirements of food, energy and cash.

## Financial Results of the Production Models

No.	Description	Production			Activity-Related Annual Income per Person (ZMK'000)		Returns per Person-day (ZMK)	
		unit	w/o	with	w/o	With	w/o	with
1	Traditional and improved bark hives	kg	250	455	237 500	413 600	4 284	5 096
2	Multichamber fixed-comb hives	kg	n/a	225	n/a	242 500	n/a	3 259
3	Top-bar hive group (10 women)	kg	n/a	540	n/a	74 850	n/a	3 797
4	Community storage	kg	n/a	n/a	n/a	N/a	n/a	n/a
5	Traditional and improved pit-sawing *	planks	849	849	368	473	2 726	3 411
6	Rural bamboo basket production *	baskets	200	200	138	440	960	4 487
7	Improved bamboo basket production	baskets	200	240	554	718	2 888	3 894
8	Harvesting and semi-processing of rattan at village level **	bundles:			302	451	1 800	2 763
		- raw	72	-				
		- cured	-	60				
9	Rattan furniture making, village level *	sets	35	35	314	349	1 867	2 078
10	Collection and marketing of mushrooms ***	kg	n/a	900	n/a	44	n/a	3 094

Notes: \* group of 2-3 members

\*\* group of 10 members

\*\*\* group of 20 members

8. The above benefits have been found practically impossible to estimate for the purposes of economic analysis since the ecological and economic value of the natural woodlands does not lend itself to such an assessment. The data on the actual depletion of forest resources is sketchy at present and therefore does not allow detailed projections of the values lost. However, consultations with major stakeholders have confirmed the trend of continuing forest depletion; it is expected that project interventions will have a sizeable impact on slowing this process down, if not reversing it in some locations. It will thereby create a basis for continued exploitation of the wide range of forest products upon which smallholders depend.

9. The productive interventions were analyzed for their economic viability based on the above factors, for the purpose of economic analysis. All investment and incremental recurrent costs of the three production support project sub-components have been included in the analysis. Base costs were used, as no physical or price contingencies were applied to the economic benefits. A standard conversion factor of 1.0 has been applied to reflect the free market environment of the present. The economic benefits were calculated for a 20-year period. The benefits taken into account are those that will be derived from the production models used for the financial analysis.



10. Economic prices were estimated for bee products based on the historical export wholesale prices realized by local traders. A large share of the benefits derived from the margin between the economic and financial prices will be realized by the bee-keepers themselves through the proposed marketing arrangements. For liquid honey and beeswax, economic prices of ZMK 1 400 and ZMK 4 200 were estimated, respectively. All other forest products were valued at their financial prices. Incremental rural labour has been costed at the estimated shadow price of rural labour of ZMK 700 per working day.

11. The results of the economic analysis justify the project's investments in promoting enhanced and sustainable production in bee-keeping, bamboo and rattan as well as and other forest products. The analysis shows that the project has the capacity to generate an economic rate of return (ERR) of 19 % over a 20-year period. The results are summarized below. The sensitivity analysis has shown that the ERR is remarkably stable, indicating the robust nature of the project.

**Estimated Economic Rates of Return**

<b>19.3 %</b>	<b>ERR for Overall Project</b>
17.5 %	ERR if benefits decrease by 10%
17.7 %	ERR if costs increase by 10%
16.4 %	ERR if benefits lag by one year