# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

# ITTO

## PROJECT PROPOSAL

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| TITLE | CAPACITY BUILDING OF THE BUILDERS' WOODWORKS INDUSTRY IN THE PHILIPPINES |
| SERIAL NUMBER | PD 655/12 (I) |
| COMMITTEE | FOREST INDUSTRY |
| SUBMITTED BY | GOVERNMENT OF THE PHILIPPINES |
| ORIGINAL LANGUAGE | ENGLISH |


SUMMARY

The pre-project entitled "Training Needs Analysis for Builders' Woodworks Industry in the Philippines" [PPD 133/07 Rev. 1(I)] implemented by the Forest Products Research and Development Institute (FPRDI) showed that there is an urgent need for building the capacities of workers in the builders' woodworks industry, provision of technical assistance/services, infusion of new technologies as well as improvement of the management skills of managers and supervisors in order to improve the capacity of workers in the industry, improve product quality and productivity and improve competitiveness in the local and foreign markets for builders' woodworks.

To address these concerns, a follow-up project is being proposed which aims to improve the skills of workers in the builders' woodworks industry in the Philippines through the conduct of training courses. Likewise, the project aims to lay the groundwork for complementation between medium/large manufacturers and micro/small enterprises in the production of builders' woodworks. Ultimately, it is hoped that the quality of builders' woodworks shall be improved with a corresponding reduction in the cost of production. This will make the Philippine builders' woodworks industry competitive in the world market resulting in improved income of workers and reduction of poverty in the sector.

The project shall be implemented in the areas identified during the pre-project, namely Regions I, II, III, IV-A and V in the island of Luzon; Regions VI in the Visayas and Region XIII in the island of Mindanao where large numbers of micro and small scale builders' woodworks industries are located.


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| EXECUTING AGENCY | FOREST PRODUCTS RESEARCH AND DEVELOPMENT INSTITUTE – DEPARTMENT OF SCIENCE AND TECHNOLOGY | |
| COOPERATING GOVERNMENTS | --- | |
| DURATION | 30 MONTHS | |
| APPROXIMATE STARTING DATE | TO BE DETERMINED | |
| BUDGET AND PROPOSED SOURCES OF FINANCE | Source | Contribution in US$ |
| | **ITTO** | **554,563** |
| | Government of the Philippines | 64,296 |
| | **TOTAL** | **618,859** |

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## LIST OF ACRONYMS

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|---|---|
| CFIP | Chamber of Furniture Industries of the Philippines |
| DENR | Department of Environment and Natural Resources |
| DOST | Department of Science and Technology |
| DTI | Department of Trade and Industry |
| EO | Executive Order |
| FPRDI | Forest Products Research and Development Institute |
| IEC | Information, education and communication |
| ITTO | International Tropical Timber Organization |
| MTPDP | Medium Term Philippine Development Plan |
| SPWP | Secondary processed wood products |

## Part 1. Project Context

1.1 Origin

In 2008 to 2009 a pre-project entitled "Training Needs Analysis for Builders' Woodworks Industry in the Philippines" [PPD 133/07 Rev. 1(I)] was implemented by the Forest Products Research and Development Institute (FPRDI) in collaboration with the Chamber of Furniture Industries of the Philippines (CFIP) and the Department of Environment and Natural Resources (DENR) as well as the Department of Trade and Industry (DTI). The Pre-project's development objective was to determine the training needs of the builders' woodworks industry in the country. It had two specific objectives, namely:

1. To determine the current level of skills and identify required standards for each position/level in the builders' woodworks industry; and
2. To determine training needs of the builders' woodworks industry by identifying gaps between required standards and current skills level.

Several observations were made of the builders' woodworks industry in the Philippines by the pre-project:

- The builders' woodworks industry in the Philippines is made up mostly of micro and small scale enterprises with only a handful of medium and large-scale enterprises. As such, most of the workers of the industry are poorly trained and lack the necessary skills. Consequently there is room for improvement of productivity, quality and cost reduction.

- Surprisingly most of the factories visited during the survey in the pre-project are registered with the Treasurer's Office of the municipality and have a Mayor's permit to operate.

- Almost all of the workers in the micro and small-scale firms did not have any formal training on the task that they are currently performing**.** Most started as assistants, acquiring some skills in the course of their employment.

- The owners of the shop normally perform quality control in every phase of production.

- There are very few safety measures implemented within the work place. Wastes such as sawdust, shavings and trimmings are not regularly disposed of and most shops are fire-hazards. Few shops have fire extinguishers. Owners of shops claim that they provide protective gadgets such as masks to their workers but the latter refuse to wear them, they are not used to wear one and they feel uncomfortable.

- Some shops employ women to perform certain tasks such as sanding and application of finishes.

- Producers of builders' woodworks are generally not organized nor have industry associations. The implications are poor access to capital, raw materials and technical information/technologies as well as very insufficient product promotion and market opportunities. Complementation between and among firms/shops does not seem to exist.

- Most workers do not possess the necessary skills to produce high quality products, incurring some wastes thus cost of production is higher than necessary.

- Improving the quality of products of the greater number of builders' woodworks manufacturers would require massive and sustained capability building of workers in

the industry. Most of the industry workers recognize the need of these capability building and are prepared to send their workers to training with minimum expenses from them. There are still some owners that need to be convinced of the importance and benefits of the capability building.

## 1.2 Relevance

### 1.2.1 Conformity with ITTO's objectives and priorities

The project aims to address objective I of ITTO, namely, to promote increased and further processing of tropical timber from sustainable sources in producing member countries with a view to promoting their industrialization and thereby increasing their employment opportunities and export earnings.

With the improvement in the knowledge and skills of workers in the builders' woodworks industry, the productivity is likewise improved and better quality products are produced. With better quality products, both the domestic and export markets can be penetrated by the local woodworks' manufacturers. Local builders' woodworks manufacturers can now compete with imported products since the quality of locally-produced builders' woodworks is improved and produced at a lower cost. Also, firms are given the opportunity to compete in the export market. With an increase in markets, the industry can also generate more jobs.

The project also addresses the following goals established by the Committee on Forest Industry:

Goal 1. Promote increased and further processing of tropical timber from sustainable sources

(5) Encourage members and assist them, where appropriate to:

- Organize workshops/seminars on the use of new and/or improved techniques and technology, including increased further processing

- Undertake sector-wide training needs analyses; development of training strategies, training facilities and course curricula; preparation of training manuals and delivery of training courses

- Improve institutional efficiency and effectiveness through sector-wide training needs analyses; develop training strategies, training facilities and course curricula; prepare training materials; and deliver training courses.

These are the intended major activities of the proposed project.

Goal 2. Improve industry's efficiency of processing and utilization of tropical timber from sustainable sources

(1) Develop, publish and disseminate information on increasing utilization efficiency and the reduction of losses and waste through the production chain

(2) Promote increased awareness and utilization of existing information on wood properties and end-use requirements.

The IEC materials that will be prepared and distributed to members of the industry, including the trainings based on these IEC materials, are expected to improve the industry's efficiency and productivity.

1.2.2 Relevance to the submitting country's policies

There are a number of policies in the forestry sector and the national development agenda that are relevant to the forest-based industry relative to forest products utilization and affecting the wood-based industries. Among these are:

- In 1991, the Department of Environment and Natural Resources (DENR) issued Administrative Order No. 24 Series of 1991[1] banning the harvesting of timber from the old-growth forest and transferring the harvesting to the second growth forest. Timber harvesting is also banned in areas with slopes greater than 50% and in elevations of 1,000 meters and higher. The consequence of this Order is the reduction of the forest production area and the reduced volume of harvested timber annually.

- Ban on the export of logs harvested from the natural forest and a ban on the export of lumber derived from naturally grown logs.

- Unlimited export of logs coming from plantation forests.

- Plantation logs are exempt from payment of forest charges (taxes on logs).

- The strategic measures for Philippine industries as embodied in the Medium Term Philippine Development Plan (MTPDP) up to 2010 is to mobilize and disseminate knowledge to upgrade technologies and increase productivity of industries.

- It is also the aim of the MTPDP to increase the value of Philippine exports to US$50 billion by tapping new industries and new markets, developing more competitive export products and services and maximizing opportunities through bilateral and multilateral agreements. Toward this direction, compliance with internationally-recognized products and services standards to ensure that construction materials are globally competitive in quality shall be promoted.

- In science and technology the strategy direction of the MTPDP is to use information and capability building to create value-adding, enhance productivity and competitiveness. Technical progress and the pursuit thereof, shall be institutionalized and sustained, which can lead to the sustained increase in incomes.

- In labor and employment, the MTPDP is cognizant that the workers are the country's comparative advantage and that there is a continuing need to sustain this advantage by adopting educational, training, and technical/vocational programs that will make labor supply more elastic. In this context, the MTPDP advocates that technical/vocational training programs shall be continuously improved to meet the critical skills needed in a

[1] DENR AO No. 24 Series of 1991.

globalizing economy, as identified through industry signals. For skills training to be of any use, standards for skills certification and assessment of competencies shall be developed based on international standards.

Executive Order 23, which provides for the moratorium on the cutting of naturally grown forest trees, is expected to promote the establishment of forest plantations in government forest lands and private lands. This effectively will increase plantation grown wood in the local market. The Project is designed to improve the processing capability of micro and small scale builders' woodworks manufacturers a ready market for these plantation grown woods which hopefully will find their way into the local and foreign markets.

## 1.3 Target Area

### 1.3.1 Geographic location

Respondents for the survey conducted for the pre-project PPD 133/07 Rev. 1(I) *Training Needs Analysis for the Builders' Woodworks Industry in the Philippines* were from Regions I, II, III, IV-A and V in the island of Luzon; Regions VI and VII in the Visayas and Region XIII in the island of Mindanao where large numbers of micro and small-scale builders' woodworks industries are located. Target beneficiaries for the project shall be coming from these regions, specifically from the following provinces:

- Region I – Ilocos Norte, Ilocos Sur, La Union, Pangasinan
- Region II – Cagayan, Isabela, Nueva Vizcaya
- Region III – Tarlac, Pampanga, Bulacan
- Region IV-A – Laguna, Rizal
- Region V – Camarines Sur, Albay, Sorsogon
- Region VI – Negros Occidental
- Region XIII – Agusan del Norte, Surigao del Norte

Figure 1 shows the location of the identified target areas.

### 1.3.2 Social, cultural, economic and environmental aspects

Builders' woodworks are one of the categories of secondary processed wood products (SPWP). These are made up of joinery and carpentry of wood such as doors, door jambs, windows, window jamb, mouldings, balusters, stairs and railings, shingles and shakes, assembled parquets and shuttering for concrete construction.

Exports of SPWP have been expanding steadily since the 1990s. In 2005 the value of SPWP exports worldwide was estimated at US$10.3 billion. The major producers of SPWP are Indonesia, Malaysia, Brazil, Thailand and Mexico accounting for 89% of total exports of ITTO producing countries. China remains the largest exporter of SPWP worldwide.

In 2010 the Philippines exported only about US$ 1.008 billion worth of builders' woodworks, increasing from US $ 742.01 million in 2007. This amounts to only around 1.1% of total exports of builders' woodworks. Accordingly only 35 companies that are exporting are registered with the Board of Investments (BOI). This is a very small fraction of the estimated total number of companies manufacturing builders' woodworks.

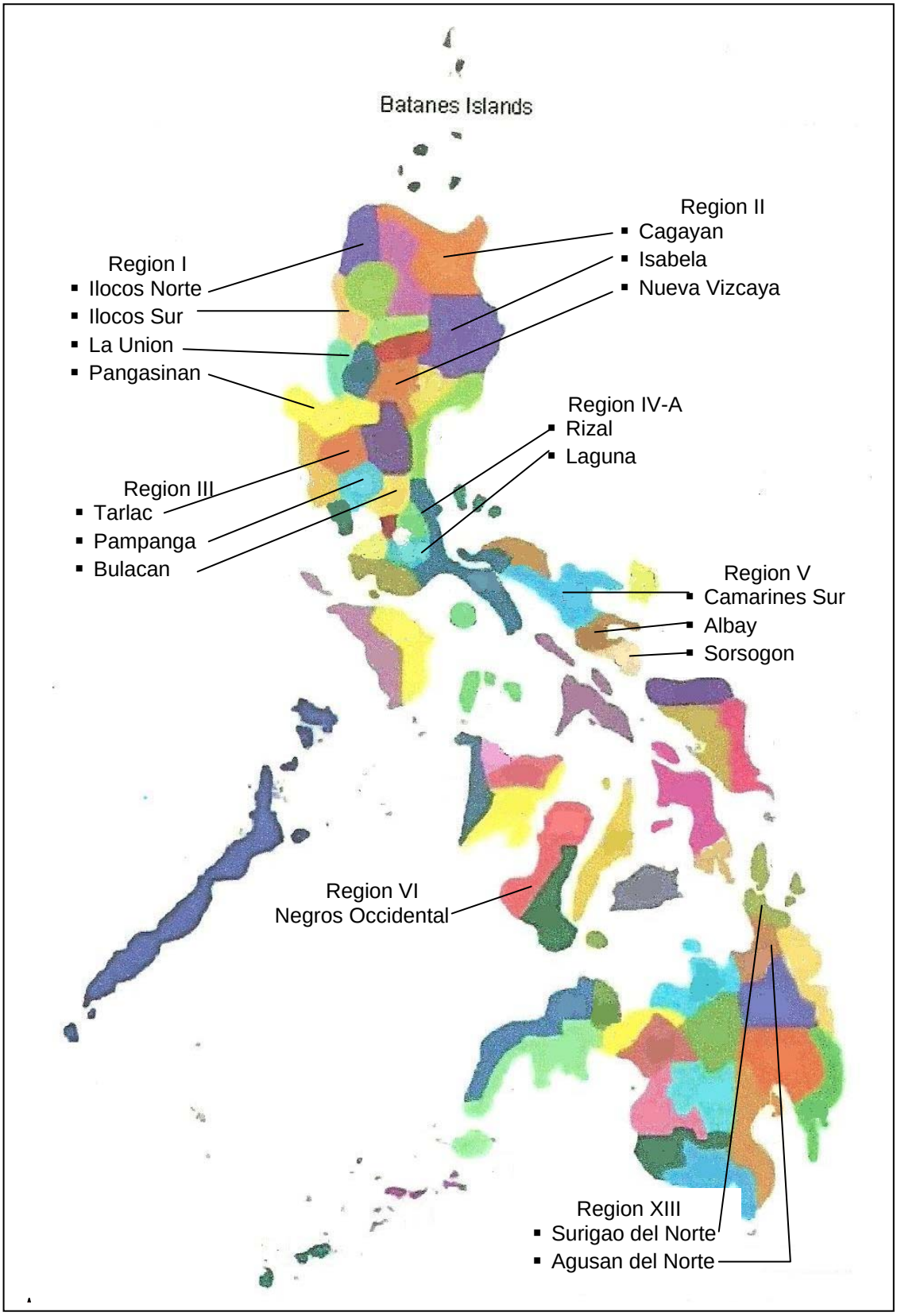



Fig. 1 Proposed project locations

In addition to export potential, there are also further opportunities from local markets. There is no estimate how large the local market is but it is expected to be extensive. In 2007, the Philippines imported about US $ 7 M worth of builders' woodworks. The large world and domestic market for builders' woodworks presents a good opportunity for the development of the industry.

As has been shown in the pre-project, the builders' woodworks sector of the secondary wood-using industry in the Philippines is made up mostly of micro and small enterprises with few medium and large companies. They are distributed all over the country with concentrations in municipalities close to large concentration of populations such as cities and urbanizing centers. The micro and small enterprises have provided mainly economic activities where they are found and provided social benefits to local residents.

Data on the total number of establishments in all-size categories along with corresponding work force have not been updated lately and remain unavailable. However, calculated estimates based on familiarity and years of association and working relationship with the secondary wood processing industries would indicate that the number of builders' woodworks manufacturers can reach no less than 4,000 dispersed throughout the country. Beneficiaries consisting of direct manpower engagements with their dependents together with the people responsible in manufacturing inputs like materials, equipment and services can run up to half a million.

The workforce of the builders' woodworks industry, particularly those of the micro and small scale sector of the industry, can be described as lacking in formal education and training on various skills needed in the industry; whatever skills they have were gained through personal experience in actual operation of machines or finishing and other operations. Thus their income is limited to what is the minimum in the industry, but often is much less.

In addition to providing direct employment, though limited in scale per enterprise, it is providing other economic benefits. It has been observed during the visits of industry members during the pre-project that where there are these enterprises other ancillary activities take place. Close by are eateries that provide food to the employees or workers of these establishments; such eateries, though however small they are, provide additional income to the entrepreneur. In turn, these eateries are outlets of products of small farmers such as vegetables and poultry products. The workers of the builders' woodworks establishments also need to travel from their homes to their place of work. This gives business to operators of different modes of transport in the areas.

In another dimension, the production of builders' woodworks provides the opportunity to use lower quality plantation grown wood such as fast growing species for the production of higher value products that could compete in the world markets. The use of forest plantations to meet construction requirements has allowed the conservation of the natural forest resources. Furthermore, the presence of markets for plantation grown species encourages small-hold tree farmers to establish tree plantations**.** A previous ITTO funded project implemented by the Forest Products Research and Development Institute (FPRDI) has shown that a potential use of lesser-used species is in the manufacture of builders' woodworks. The use of lesser-used species expands the resource base and promotes the conservation of the more commonly-used commercial species.

Many of the builders' woodworks products such as mouldings, components of panel doors and windows are small and narrow. This permits the use of

trimmings and edgings from the production of larger products such as wood panels that would have otherwise been thrown away as wastes thus further contributing to the conservation of forest resources.

The builders' woodworks industry has also been providing certain social benefits. Many women are employed in certain aspects of production. Managers prefer women in such tasks as sanding prior to application of finishes. Women are more patient and are observed to apply the finishes more evenly on the surface of wood products. They are also employed in the repair of defects such as cracks; they apply putty, sand the surface and apply the finishes.

Another social benefit generated by the builders' woodworks, as in other enterprises, is that employees are able to send their children to school. Their salaries, though meager, is sufficient enough to support their children's education even if it is only up to the primary or secondary level. In addition, the children have better nutrition because of the income provided the workers' employment in the industry.

1.4 Expected outcomes at project completion

It is expected that the Project will raise the level of skills of workers from a certain level to another level, namely:

- one who measures dimensions using a meter stick to one who uses a caliper for precise dimensions
- one who just operates a wood working machine to one who can perform preventive and corrective maintenance of the machine
- one who merely applies coating and finishing materials on wood surfaces to one who understands why the surface of the wood material has to be prepared in such a way that the finish will last
- one who can mix finishes for application
- one who understands why wood has to be dried well to improve the finish of the material and to make it stable.

Furthermore, the following are expected after the completion of the Project:

- productivity of participants increased by at least 30% 5 years after the Project
- participants' wastes shall have been reduced by 20% 5 years after the Project
- export of the industry increased by 30% 5 years after the Project
- within a year after the project, the participating manufacturers will have installed safety measures in the factory and workers would have undergone seminars on safety measures
- within two (2) years after the Project participating manufacturers will have become members of industry organizations such as the Chamber of Furniture Industries of the Philippines

- within two years after the Project micro and small scale manufacturers of builders' woodworks will have established partnership with medium and/or large manufacturers where the latter provide training and new technologies to the former

## Part 2. Project Rationale and Objectives

### 2.1 Rationale

#### 2.1.1 Institutional set-up and organizational issues

Results of the survey among manufacturers of builders' woodworks indicated that they are requesting for training in various aspects of manufacturing, particularly in wood seasoning, machine operation and maintenance and finishing, including record keeping, accounting and general administration.

To improve the skills of the workers in the industry would require capability building through training by qualified trainers from government institutions and from the industry itself particularly from the medium and large firms who have expressed their willingness to provide training to workers in the micro and small scale builders' woodworks manufacturers. Complementation or integration within the industry can also be explored even on a pilot-scale basis. A big brother – small brother model can be initiated to test the values of sharing of resources and opportunities in the sustained growth and development of the builders' woodworks industry.

To carry out the lead role in implementing the capability building program is the Forest Products Research and Development Institute (FPRDI), the research and development arm on forest products utilization of the Department of Science and Technology (DOST). Established in 1954, it is mandated to: (a) conduct basic and applied research and development on forest utilization based on the needs of the forest products using and allied industries and the general public; (b) undertake the transfer of completed research and development results to end-users via linkages; and (c) provide technical service and training to various clientele.

As in the pre-project, FPRDI shall be working closely with the regional/provincial offices of the Department of Science and Technology (DOST) and the Department of Trade and Industry (DTI) in the conduct of the project. FPRDI's linkages with these organizations are already well-established so the project does not foresee any problem in implementing the proposed activities. Trainors shall be coming primarily from FPRDI with available experts from other training providers and ancillary industries providing additional expertise when the need arises. Large industry manufacturers of builders' woodworks shall also be tapped in the implementation of the big brother-small brother scheme being explored in the project.

2.1.2 Stakeholder analysis

Primary stakeholders for the project are the respondents in the pre-project [PPD 133/07 Rev. 1(I)] - micro and small enterprises engaged in the production/manufacture of builders' woodworks while secondary stakeholders are the regional/provincial offices of the DOST and DTI and ancillary industries providing inputs to the builders' woodworks industry. Stakeholder analysis is shown in Table 1.

Table 1. Stakeholder analysis – capacity building for the builders' woodworks industry in the Philippines

| Stakeholder Group | Characteristics | Problems, Needs, Interests | Potentials | Involvement in Project |
|---|---|---|---|---|
| ***Primary Stakeholders*** | | | | |
| Manufacturers of builders' woodworks requiring technical training and manufacturers requiring managerial and business skills training | Primarily micro and small enterprises with few medium and very large corporations<br><br>Very few manufacture solely builders' woodworks<br><br>Because of financial constraints, most fabricate their own machineries or buy used/ second-hand machines<br><br>Most workers lack formal training, acquiring skills on-the-job, progressing until they are allowed to handle machineries | Fabricated or used/ second-hand machines do not perform accurately, leading to low quality surfaces or uneven cuts necessitating further processing leading to higher costs of production<br><br>Lack information on new technologies in wood processing, credit schemes and subsidies from several government programs | Huge potential for builders' woodworks in both export and domestic markets as evidenced by the increase in exports from US $ 107 M in 2005 to US $ 742 in 2007 and importation of around US $ 7 M of builders' woodworks in 2007<br><br>Willingness to improve their skills, efficiency and productivity through training<br><br>Larger members of the industry are supportive of the concept of sub-contracting to micro and small manufacturers | Primary project beneficiary |

| Stakeholder Group | Characteristics | Problems, Needs, Interests | Potentials | Involvement in Project |
|---|---|---|---|---|
| ***Secondary Stakeholders*** | | | | |
| Ancillary industries providing inputs to the builders' woodworks industry (eg. paint manufacturers, suppliers of equipment) | Usually with established manpower development programs, particularly in the application of latest trends in the industry | Knowledge in latest trends/ developments in wood processing<br><br>Need to promote products that can be used by the industry | Can provide additional trainors in areas where FPRDI experts may be lacking | Additional trainors for capacity building program |
| Regional/ provincial offices of the DOST and DTI | Mandated to provide assistance to industries<br><br>Located in key areas/provinces | Experienced in providing assistance to industries | Can provide assistance in organizing training programs for primary stakeholders<br><br>Can provide other forms of assistance that the project may not be able to provide such as sourcing funds/financing for business expansion | Can assist the project in implementing capacity building program |
| Medium and large scale manufacturers of builders' woodworks | Usually with established manpower development programs, particularly in the application of latest trends in the industry | Knowledge in latest trends/ developments in wood processing | Willingness to provide training to workers in the micro and small scale builders' woodworks manufacturers.<br><br>Possible big brother – small brother scheme on sharing of resources and opportunities | Additional trainors for capacity building<br><br>Partner in developing model for big brother – small brother scheme |

### 2.1.3 Problem analysis

While exports of builders' woodworks have improved tremendously in the last two years, these have been limited to a limited number of producers. The increasing export volume is hampered by the low level of quality of products and high cost of production as a result of the low level of skills of workers in the micro and small sector of the industry as borne out by the results of the pre-project.

The pre-project identified the low quality of products as a direct consequence of three causes: low skills in operation of wood working machines; low precision, home-made/fabricated machines and low quality raw materials.

Majority of the members of the builders' woodworks industry are micro and small enterprises. That being the case, their workers are not properly trained for specific tasks, the workers having obtained whatever skills they have through experience without formal instructions on the proper method of performing their tasks. They are deficient in skills in various areas of operations such as in raw material selection, milling/processing, assembly and in finishing.

It was also observed during the conduct of the pre-project that the wood working machineries of most of the companies visited, particularly the wood-cutting machines, are fabricated by them and the performance of these machines are less precise which contributes to the low level of quality of products and high cost of production.

Low quality materials come either from the inherent quality of the wood itself such as presence of large knots or imprecise milling of the logs into lumber. Improperly dried lumber for use as part of a door or window produce products that will crack, split or exhibit open joints when the wood part with high moisture content begins to dry. Better selection of raw materials for the manufacture of builders' woodworks will help ensure higher quality products.

In addition, the micro and small enterprises lack sufficient capital to expand production and their production level individually is too small to meet the level of volume demanded by importers. Most of the members of the industry also do not belong to any industry association and therefore do not have access to new information/technology, new markets and cannot enjoy the benefits that associations can provide such as lower cost of inputs bought in bulk. Related to this, no degree of complementation or integration seems to exist among producers within the same or different levels of operations.

The problem tree is given in Figure 2.

Figure 2. Problem tree, capacity building for the builders' woodworks industry in the Philippines

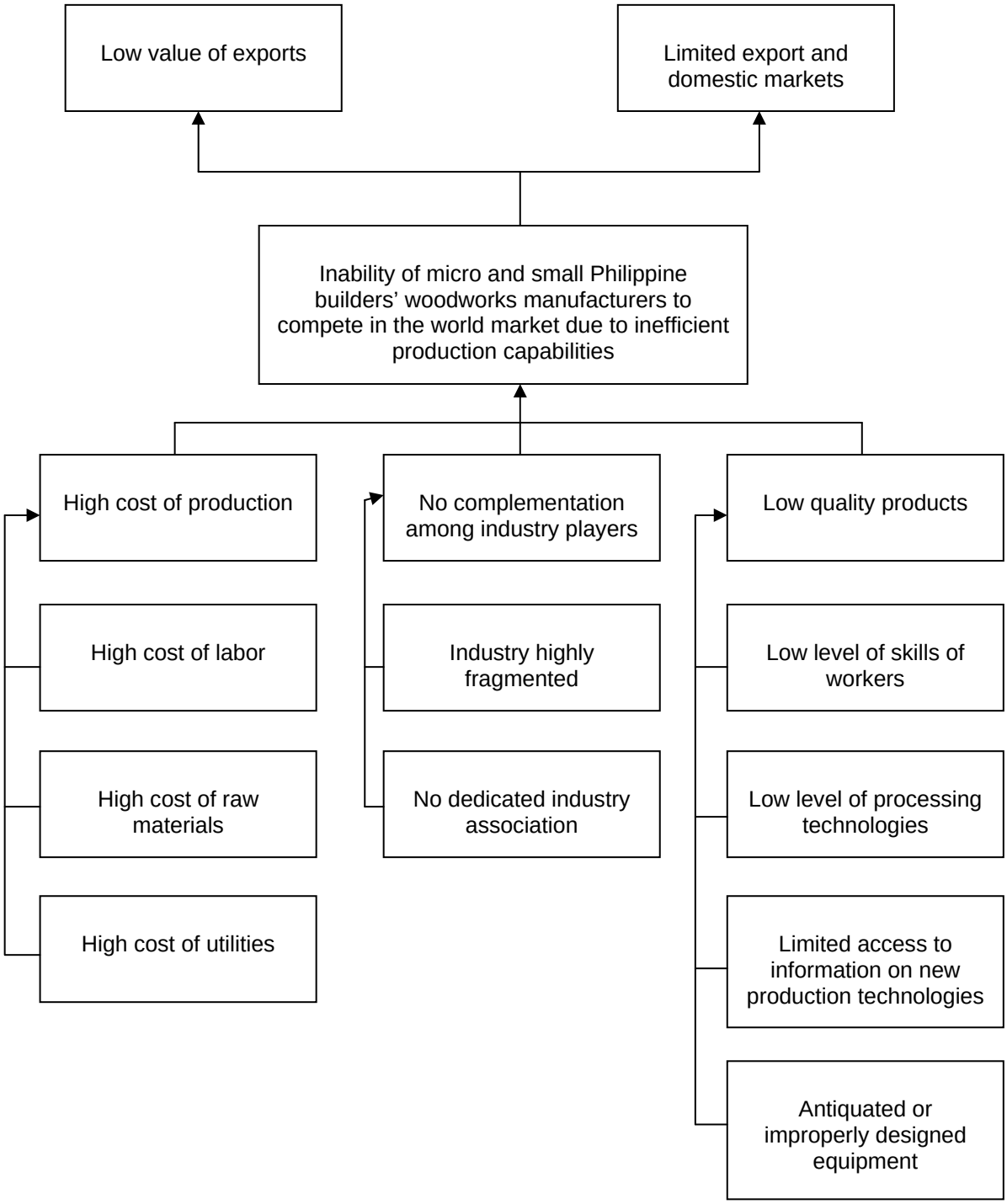
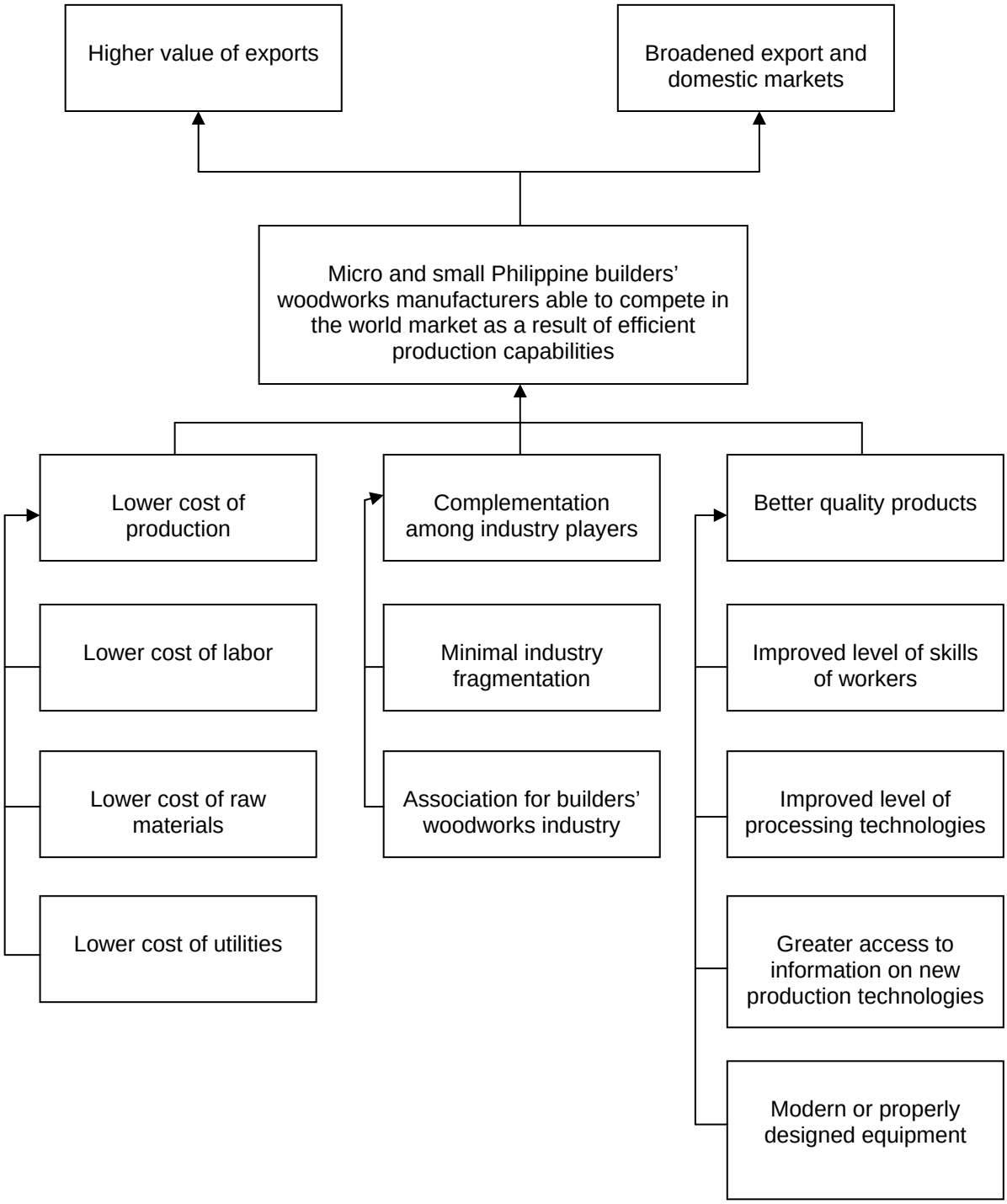


Figure 3. Objective tree, capacity building for the builders' woodworks industry in the Philippines



2.1.4 Logical framework matrix

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Development Objective***<br><br>To improve the quality of builders' woodworks and reduce the cost of production making the Philippine builders' woodworks industry competitive in the export and domestic markets and resulting in improved income of workers and reduced poverty in the sector | Increase in the export of builders' woodworks by 30% five years after the completion of the project<br><br>Increase in sales of respondents by 20% | Report of exports and imports of builders' woodworks in the Philippine Forestry Statistics<br><br>Report on Impact Assessment/Ex-Post Evaluation | Markets for builders' woodworks continue to develop domestically and worldwide |
| ***Specific Objective 1***<br><br>To improve the skills of workers in the builders' woodworks industry through training in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control and thru complementation between medium/large manufacturers and micro/small enterprises in the production of builders' woodworks | Training modules/ materials developed in Year 1 of the project<br><br>Training of 150 workers implemented in Year 2 of the Project<br><br>At least two (2) working contractual models implemented by the end of the project | Training modules<br><br>Training materials<br><br>Technical report<br><br>Training report<br><br>Contractual manufacturing agreements | Builders' woodworks managers and workers convinced on the benefits of training and willing to attend it<br><br>Medium/large enterprises and micro/ small enterprises convinced with the benefits of entering into a contractual working relationship |

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Output 1.1***<br><br>Training materials/ modules developed in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control developed based on the training needs assessment of the pre-project | Training materials and modules on 6 subject areas developed in Year 1 | Training modules<br><br>Training materials<br><br>Technical report | National Consultants available in time<br><br>The training materials are illustrative enough to reach the targeted stakeholders |
| ***Activity 1.1.1***<br><br>Collect, collate and update materials for use in the preparation of training modules | Collected materials | Collected and updated materials | Materials are available |
| ***Activity 1.1.2***<br><br>Prepare training modules | Training modules prepared | Training modules | Inputs from national experts and industry partners available |
| ***Activity 1.1.3***<br><br>Pre-test training modules with workers from selected producers | Training modules pre-tested | Reports of pre-test | Industry partners are cooperative |
| ***Activity 1.1.4***<br><br>Revise training modules based on comments of participants in the pre-test | Training modules revised | Revised modules | Adequate time for revision |
| ***Activity 1.1.5***<br><br>Prepare training aids and materials | Training aids and materials prepared | Training aids | Modules pre-tested and revised |

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Output 1.2***<br><br>Improved skills of workers and managers in the builders' woodworks industry | Training implemented starting first semester of Year 2 up to third quarter of Year 3<br><br>150 workers/ managers of builders' woodworks firms trained by the end of the project in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control | Training reports<br><br>Field visit to the industries in the areas identified | Professional trainers available and industry partners willing to participate |
| ***Actvity 1.2.1***<br><br>Identify participants to training | Participants identified | List of confirmed participants | Availability of participants and owners |
| ***Activity 1.2.2***<br><br>Coordinate and prepare for conduct of training with provincial/ regional counterparts | Coordination and preparation at provincial/regional level | List of confirmed venues and other logistical requirements attended to | Cooperation of local/ counterpart organizers |
| ***Activity 1.2.3***<br><br>Conduct of training courses | Training courses conducted | Attendance sheets<br>Evaluation of trainings | Logistical requirements available |
| ***Activity 1.2.4***<br><br>Prepare training report | Training report prepared | Training reports | Training conducted |

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Output 1.3***<br><br>Immediate impacts of trainings on the skills of workers have been determined | Quality of builders' woodwork products produced by trainees improved, cost of production reduced as assessed starting in the 3rd quarter of year 2 of implementation and reduction of wastes by at least 20% five years after project implementation | Assessment of factory owners<br><br>Reduction in percentage rejects/ reworks<br><br>Report on impact evaluation | National Consultants available in time<br><br>Survey conducted on time |
| ***Actvity 1.3.1***<br><br>Prepare survey instrument for determination of immediate impacts of training | Survey instruments prepared | Survey instruments | National Consultants available in time |
| ***Activity 1.3.2***<br><br>Pre-test the survey instrument and revise according to comments of participants | Survey instrument pre-tested and revised | Pre-tested and revised instrument | Inputs from industry partners available |
| ***Activity 1.3.3***<br><br>Conduct survey of immediate impacts of training | Impact assessments conducted | Accomplished survey questionnaire | Cooperation of industry partners |
| ***Activity 1.3.4***<br><br>Analyze data obtained during the survey | Data analyzed | Analyzed data | Pertinent data available |
| ***Activity 1.3.5***<br><br>Prepare report on immediate impacts of the training | Assessment reports prepared | Reports on immediate impact of training | Immediate impacts determined |

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Output 1.4***<br><br>Model of working arrangements among enterprises has been developed | Model of working arrangement developed within the first semester of Year 1 | Minutes of meeting between enterprises and project team<br><br>Technical report | Enterprises willing to participate<br><br>Arrangement agreed upon as planned |
| ***Activity 1.4.1***<br><br>Develop the model for the working arrangement between medium/large enterprises and micro/small enterprises | Model developed | Proposed model | Availability of national consultants/experts |
| ***Activity 1.4.2***<br><br>Discuss model with medium/large and micro/small enterprises | Model discussed | Minutes of meeting with stakeholders | Stakeholders available |
| ***Activity 1.4.3***<br><br>Revise model according to suggestions of cooperators | Model revised | Revised model | Availability of consultants and stakeholders |
| ***Output 1.5***<br><br>Working arrangement for the big-small brother arrangement has been implemented and immediate impacts determined | Working arrangement implemented in 3rd quarter of Year 2<br><br>Survey of immediate impacts of arrangements conducted and analyzed in the 1st quarter of Year 3 | List of participating enterprises<br><br>Technical arrangements<br><br>Memorandum of Understanding/ Agreement<br><br>Technical report | Enterprises willing to participate<br><br>Arrangements agreed upon<br><br>Survey conducts and analyzed as planned |
| ***Activity 1.5.1***<br><br>Identify enterprises that will participate in the working arrangement | Enterprises identified | List of identified enterprises | Enterprises are willing and available |

| Strategy of Intervention | Measurable Indicators | Means of Verification | Key Assumptions |
|---|---|---|---|
| ***Activity 1.5.2***<br><br>Actual implementation of the sub-contracting of builders' woodworks or parts thereof | Working model implemented | Signed agreement | Enterprises are willing to participate |
| ***Activity 1.5.3***<br><br>Obtain and analyze data/information on factors affecting the sub-contracting arrangement | Data obtained and analyzed | Analyzed data and information | Data and information available |
| ***Activity 1.5.4***<br><br>Prepare report on the sub-contracting arrangement | Report on subcontracting prepared | Report on subcontracting | Data and information available |
| ***Output 1.6***<br><br>Working arrangements to ensure sustainability of capability building in the builders' woodworks industry | At least two big-small brother arrangement participants from the industry | Signed memoranda of agreements among members of the industry | Members of the industry are willing to participate |
| ***Activity 1.6.1***<br><br>Monitoring of working arrangements | Report on progress of working arrangements | Report on subcontracting | Data and information available |

2.2 Objectives

2.2.1 Development objective and impact indicators

Development Objective:

To improve the quality of builders' woodworks and reduce the cost of production making the Philippine builders' woodworks industry competitive in the world market and resulting in improved income of workers and reduced poverty in the sector.

Impact Indicator

Increase by 30% in the export of builders' woodworks five (5) years after the completion of the project.

2.2.2 Specific objectives and outcome indicators

Specific Objective 1

To improve the skills of workers in the builders' woodworks industry through training in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control and thru complementation between medium/large manufacturers and micro/small enterprises in the production of builders' woodworks.

Outcome Indicators

- Training materials/ modules developed in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control developed based on the training needs assessment of the pre-project
- Training of 150 workers/managers implemented in Year 2 of the project
- Working contractual model implemented by the end of the project

**Part 3. Description of Project Interventions**

3.1 Outputs and activities

3.1.1 Outputs

Output 1.1 Training materials/ modules developed in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control developed based on the training needs assessment of the pre-project

Indicator

- Training materials and modules on 6 subject areas developed in Year 1

Output 1.2 Improved skills of workers and managers in the builders' woodworks industry

Indicator

- Training implemented starting first semester of Year 2 up to third quarter of Year 3
- 150 workers/managers of builders' woodworks firms trained by the end of the project in areas such as material preparation and handling; assembly and construction techniques; wood working machine operation; finishing techniques; and material management and inventory control

Output 1.3 Immediate impacts of trainings on the skills of workers have been determined

Indicator

- Quality of builders' woodwork products produced by trainees improved, cost of production reduced as assessed starting in the third quarter of Year 2 of implementation and reduction of wastes by at least 20% five years after project implementation

Output 1.4 Model of working arrangements among enterprises has been developed

Indicator

- Model of working arrangement developed within the first semester of Year 1

Output 1.5 Working arrangement for the big-small brother arrangement has been implemented and immediate impacts determined

Indicator

- Working arrangement implemented in the 3rd quarter of Year 2
- Survey of immediate impacts of arrangements conducted and analyzed in the 1st quarter of Year 3

Output 1.6 Working arrangements to ensure sustainability of capability building in the builders' woodworks industry

Indicator

- At least two big-small brother arrangement participants from the industry

3.1.2 Activities

Activity 1.1.1 Collect, collate and update materials for use in the preparation of training modules

Activity 1.1.2 Prepare training modules

Activity 1.1.3 Pre-test training modules with workers from selected producers

Activity 1.1.4 Revise training modules based on comments of participants in the pre-test

Activity 1.1.5 Prepare training aids and materials

Activity 1.2.1 Identify participants to training

Activity 1.2.2 Coordinate and prepare for conduct of training with provincial/ regional counterparts

Activity 1.2.3 Conduct of training courses

Activity 1.2.4 Prepare training report

Activity 1.3.1 Prepare survey instrument for determination of immediate impacts of training

Activity 1.3.2 Pre-test the survey instrument and revise according to comments of participants

Activity 1.3.3 Conduct survey of immediate impacts of training

Activity 1.3.4 Analyze data obtained during the survey

Activity 1.3.5 Prepare report on immediate impacts of the training

Activity 1.4.1 Develop the model for the working arrangement between medium/ large enterprises and micro/small enterprises

Activity 1.4.2 Discuss model with medium/large and micro/small enterprises

Activity 1.4.3 Revise model according to suggestions of cooperators

Activity 1.5.1 Identify enterprises that will participate in the working arrangement

Activity 1.5.2 Actual implementation of the sub-contracting of builders' woodworks or parts thereof

Activity 1.5.3 Obtain and analyze data/information on factors affecting the sub-contracting arrangement

Activity 1.5.4 Prepare report on the sub-contracting arrangement

Activity 1.6.1 Monitoring of working arrangements

3.2 Implementation approaches and methods

It is the intended strategy of the project to devise easy to understand learning modules and implement a training program that would incorporate both lectures and hands-on practical experience. This shall be done by working closely with experts from both the FPRDI, other training providers, medium and large builders' woodworks manufacturers and ancillary manufacturers that provide inputs to the industry such as manufacturers of finishes, wood working equipment and the like.

Medium and large companies producing builders' woodworks also have their own training programs for their employees. The project shall also partner with these companies in providing the training program. These companies have been sounded off during the pre-project and they have signified their commitment to assist in training workers of the micro and small enterprises during the implementation of the proposed capacity building project.

To be able to expand their operations, micro and small industry players will be encouraged to form partnership with bigger and exporting members in a sub-contracting basis. This will be carried out through a series of consultative meetings attended by all stakeholders until a working arrangement is finalized. This arrangement shall be formalized through a Memorandum of Understanding/Memorandum of Agreement that shall detail all responsibilities and roles of concerned parties.

An internal ex-post evaluation of the training shall be done at least six (6) months after it has been conducted to determine if the training programs have been effective, Likewise, the working arrangement shall also be reviewed towards the end of the project to determine if the scheme can be replicated in other areas.

3.3 Work plan

| Outputs/Activities | Responsible Party | Year 1 Quarter | | | | Year 2 Quarter | | | | Year 3 Quarter | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 |
| ***Output 1.1*** | | | | | | | | | | | |
| 1.1.1 Collect, collate and update materials for use in the preparation of training modules | Project staff | | | | | | | | | | |
| 1.1.2 Prepare training modules | Project staff<br><br>National experts/ consultant | | | | | | | | | | |
| 1.1.3 Pre-test training modules with workers from selected producers | Project staff | | | | | | | | | | |
| 1.1.4 Revise training modules based on comments of participants in the pre-test | Project staff<br><br>National experts/ consultant | | | | | | | | | | |
| 1.1.5 Prepare training aids and materials | Project staff | | | | | | | | | | |
| **Output 1.2** | | | | | | | | | | | |
| 1.2.1 Identify participants to training | Project Leader | | | | | | | | | | |
| 1.2.2 Coordination and preparation for conduct of training with provincial/ regional counterparts | Project Leader | | | | | | | | | | |
| 1.2.3 Conduct of training courses in the following areas:<br>▪ Material preparation and handling<br>▪ Assembly and construction techniques<br>▪ Wood working machine operation and maintenance<br>▪ Finishing techniques<br>▪ Material management and inventory control (for management) | Project staff<br><br>National experts | | | | | | | | | | |
| 1.2.4 Prepare training report | Project Leader<br><br>Training Coordinator | | | | | | | | | | |

| Outputs/Activities | Responsible Party | Year 1 Quarter | | | | Year 2 Quarter | | | | Year 3 Quarter | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 |
| ***Output 1.3*** | | | | | | | | | | | |
| 1.3.1 Prepare survey instrument for determination of immediate impacts of training | Project Leader<br><br>National Consultant/Expert | | | | | | | | | | |
| 1.3.2 Pre-test survey instrument and revise according to comments of participants | Project Staff | | | | | | | | | | |
| 1.3.3 Conduct survey of immediate impacts of training | Project Staff | | | | | | | | | | |
| 1.3.4 Analyze data obtained during the survey | Project Staff<br><br>National Expert | | | | | | | | | | |
| 1.3.5 Prepare report on immediate impacts of the training | Project Leader | | | | | | | | | | |
| ***Output 1.4*** | | | | | | | | | | | |
| 1.4.1 Develop the model for the working arrangement between medium/large enterprises and micro/small enterprises | Project Leader<br><br>National Consultant | | | | | | | | | | |
| 1.4.2 Discuss model with medium/large and micro/small enterprises | Project Leader<br><br>National Consultant | | | | | | | | | | |
| 1.4.3 Revise model according to suggestions of cooperators | Project Leader<br><br>National Consultant | | | | | | | | | | |
| ***Output 1.5*** | | | | | | | | | | | |
| 1.5.1 Identify enterprises that will participate in the working arrangement | Project Leader<br><br>National Consultant | | | | | | | | | | |
| 1.5.2 Actual implementation of the subcontracting of builders' woodworks or parts thereof | Concerned stakeholders<br><br>Project Leader<br><br>National Consultant | | | | | | | | | | |

| Outputs/Activities | Responsible Party | Year 1 Quarter | | | | Year 2 Quarter | | | | Year 3 Quarter | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 |
| 1.5.3 Obtain and analyze data/ information on factors affecting the sub-contracting agreement | Project Staff<br>Project Leader<br>National Consultant | | | | | | | | | | |
| 1.5.4 Prepare report on the sub-contracting agreement | Project Leader<br>National Consultant | | | | | | | | | | |
| ***Output 1.6*** | | | | | | | | | | | |
| 1.6.1 Monitoring of working arrangements | Project Leader<br>Project Staff<br>National Consultant | | | | | | | | | | |

3.4 Budget

3.4.1 Master budget schedule

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| ***Output 1.1*** | ***Training materials/modules have been developed based on the training needs assessment of the pre-project*** | | | | | | | | | | | |
| **A.1.1.1** | **Collect, collate and update materials for use in the preparation of training modules** | | | | | | | | | | | |
| | Project Leader | 11.1 | 3 | | | Month | 600 | 1,800 | 1,800 | | | 1,312 |
| | 1 Project Assistant | 12.1 | 3 | | | Month | 576 | 1,728 | 1,728 | | | |
| | Desktop computer with accessories and licensed software | 44.1 | 1 | | | Unit | 3,000 | 3,000 | 3,000 | | | |
| | Office supplies | 54 | 1 | | | Year | 1,000 | 1,000 | 1,000 | | | |
| **A.1.1.2** | **Prepare training modules** | | | | | | | | | | | |
| | Project Leader | 11.1 | 3 | | | Month | 600 | 1,800 | 1,800 | | | 1,312 |
| | 1 Project Assistant | 12.1 | 3 | | | Month | 576 | 1,728 | 1,728 | | | |
| | 1 National Consultant | 13 | 3 | | | Month | 1,200 | 3,600 | 3,600 | | | |
| | National Experts on wood seasoning, preservative treatment, assembly and construction techniques, wood working machine operation and maintenance, finishing techniques and material management and inventory control<br><br>6 experts x $ 300/month x 3 months | 11.2 | 3 | | | Month/ person | 300 | 5,400 | 5,400 | | | 3,633 |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader | 31.1 | 6 | | | Days | 100 | 600 | 600 | | | |
| | Other personnel (2 persons) | 31.3 | 6 | | | Days/ person | 10 | 120 | 120 | | | |
| | Local transport costs | 33 | 1 | | | Lot | 500 | 500 | 500 | | | |
| | Sundries | 61 | 1 | | | Year | 600 | 600 | 600 | | | |

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| **A.1.1.3** | **Pre-test training modules with workers from selected producers** | | | | | | | | | | | |
| | National Experts<br>6 experts x US$ 300 x 1 month | 11.2 | 1 | | | Month | 300 | 1,800 | 1,800 | | | 1,211 |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader<br>$65/day x 5 days per training x 5 training courses | 31.1 | 25 | | | Days | 65 | 1,625 | 1,625 | | | |
| | National Experts<br>$65/day x 5 days per training x 6 experts | 31.1 | 30 | | | Days | 65 | 1,950 | 1,950 | | | |
| | Other Personnel<br>$35/day x 5 days per training x 5 training courses x 2 persons | 31.3 | 56 | | | Days | 35 | 1,750 | 1,750 | | | |
| | Local transport costs | 33 | 1 | | | Lot | 600 | 600 | 600 | | | |
| | Sundries<br>$30/training participant x 15 participants x 5 trainings x 5 days per training | 61 | 25 | | | Days/ partici-pant | 30 | 11,250 | 11,250 | | | |
| **A.1.1.4** | **Revise training modules based on comments of participants in the pre-test** | | | | | | | | | | | |
| | Project Leader | 11.1 | 3 | | | Month | 600 | 1,800 | 1,800 | | | 1,312 |
| | National Experts<br>6 experts x $300/month x 2 months | 11.2 | 2 | | | Months/ person | 300 | 3,600 | 3,600 | | | 2,422 |
| | 1 Project Assistant | 12.1 | 3 | | | Month | 576 | 1,728 | 1,728 | | | |
| | 1 National Consultant | 13 | 3 | | | Month | 1,200 | 3,600 | 3,600 | | | |
| **A.1.1.5** | **Prepare training aids and materials** | | | | | | | | | | | |
| | Project Leader | 11.1 | 3 | | | Month | 600 | 1,800 | 1,800 | | | 1,312 |
| | 1 Project Assistant | 12.1 | 3 | | | Month | 576 | 1,728 | 1,728 | | | |
| | 6 National Experts | 11.2 | 3 | | | Month/ person | 300 | 5,400 | 5,400 | | | 3,633 |
| | Sub-contracts | | | | | | | | | | | |
| | Printing of 5 training manuals at $ 10/manual x 400 copies per manual | 21 | 2,000 | | | Manuals | 10 | 20,000 | 20,000 | | | |
| | Editing and lay-outing of manuals | 22 | 5 | | | Manuals | 150 | 750 | 750 | | | |

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| | Contingencies | 63 | 1 | | | Lot | 400 | 400 | 400 | | | |
| ***Output 1.2*** | ***Improved skills of workers and managers in the builders' woodworks industry*** | | | | | | | | | | | |
| **A.1.2.1** | **Identify participants to training** | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **A.1.2.2** | **Coordinate and prepare for conduct of training with provincial/regional counterparts** | | | | | | | | | | | |
| | Office supplies | 54 | | 1 | | Year | 1,000 | 1,000 | | 1,000 | | |
| **A.1.2.3** | **Conduct of training courses** | | | | | | | | | | | |
| | Project Leader | 11.1 | | 12 | | Month | 600 | 7,200 | | 7,200 | | 5,248 |
| | 1 Project Assistant | 12.1 | | 12 | | Month | 576 | 6,912 | | 6,912 | | |
| | National Experts<br>6 experts x $ 300/month x 12 months | 11.2 | | 12 | | Month/ person | 300 | 21,600 | | 21,600 | | 14,532 |
| | Training Coordinator<br>$165/training x 5 trainings/area x 3 areas | 12.2 | | 3 | | Target areas | 165 | 2,475 | | 2,475 | | 1,900 |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader<br>$65/day x 5 days per training x 5 trainings per target area x 7 target areas | 31.1 | | 7 | | Target areas | 65 | 11,375 | | 11,375 | | |
| | National Experts<br>$65/day x 5 days per training x 7 target areas x 6 experts | 31.1 | | 7 | | Target areas | 65 | 13,650 | | 13,650 | | |
| | Other labor<br>$35/day x 5 days per training x 5 trainings per target area x 7 target areas x 4 persons | 31.3 | | 7 | | Target areas | 35 | 24,500 | | 24,500 | | |
| | Local transport costs | 33 | | 1 | | Lot | 20,000 | 20,000 | | 20,000 | | |
| | Multi-media projector with laptop and accessories, including screen | 44.2 | | 1 | | Lot | 6,000 | | | 6,000 | | |
| | Sundries<br>$30/day per participant x 5 days x 15 participants per training x 5 trainings per target area x 7 target areas | 61 | | 7 | | Target areas | 30 | 78,750 | | 78,750 | | |
| | Contingencies | 63 | | 1 | | Year | 500 | 500 | | 500 | | |

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| ***Output 1.3*** | ***Immediate impacts of training on the skills of workers have been determined*** | | | | | | | | | | | |
| **Activity 1.3.1** | **Prepare survey instrument for determination of immediate impacts of training** | | | | | | | | | | | |
| | 1 National Expert on Impact Assessment | 11.2 | 3 | | | Month | 300 | 900 | 900 | | | 950 |
| **Activity 1.3.2** | **Pre-test the survey instrument and revise according to comments of participants** | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Activity 1.3.3** | **Conduct survey of immediate impacts of training** | | | | | | | | | | | |
| | Project Leader | 11.1 | | | 6 | Month | 600 | 3,600 | | | 3,600 | 2,624 |
| | Project Assistant | 12 | | | 6 | Month | 576 | 3,456 | | | 3,456 | |
| | National Expert on Impact Assessment | 11.2 | | 6 | 6 | Month | 300 | 3,600 | | 1,800 | 1,800 | 3,800 |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader<br>$65/day x 5 days per target area x 7 target areas | 31.1 | | 3 | 4 | Target area | 65 | 2,275 | | 975 | 1,300 | |
| | National Expert<br>$65/day x 5 days per target area x 7 target areas | 31.1 | | 3 | 4 | Target area | 65 | 2,275 | | 975 | 1,300 | |
| | Other personnel<br>$35/day x 5 days per target area x 7 target areas x 2 personnel | 31.3 | | 3 | 4 | Target area | 35 | 4,900 | | 2,100 | 2,800 | |
| | Local transport costs | 33 | | 3 | 4 | Target area | 1,000 | 7,000 | | 3,000 | 4,000 | |
| | Sundries | 61 | | | 1 | Year | 1,000 | 1,000 | | | 1,000 | |
| **Activity 1.3.4** | **Analyze data obtained during survey** | | | | | | | | | | | |
| | Office supplies | 54 | | | 1 | Lot | 1,000 | | | | 1,000 | |
| **Activity 1.3.5** | **Prepare report on immediate impacts of the training** | | | | | | | | | | | |
| ***Output 1.4*** | ***Model of working arrangements among enterprises have been developed*** | | | | | | | | | | | |
| **Activity 1.4.1** | **Develop the model for the working arrangement between medium/large enterprise and micro/small enterprises** | | | | | | | | | | | |
| | National Consultant | 13 | 3 | | | Month | 1,200 | 3,600 | 3,600 | | | |

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| **Activity 1.4.2** | **Discuss model with medium/large and micro/small enterprises** | | | | | | | | | | | |
| | National Consultant | 13 | 2 | | | Month | 1,200 | 2,400 | 2,400 | | | |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader<br>$65/day x 3 target areas x 4 days per target area | 31.1 | | 12 | | Day | 65 | 780 | 780 | | | |
| | National Consultant<br>$65/day x 3 target areas x 4 days per target area | 31.1 | | 12 | | Day | 65 | 780 | 780 | | | |
| | Other personnel<br>$35/day x 3 target areas x 4 days per target area x 2 persons | 31.3 | | 12 | | Day | 35 | 840 | 840 | | | |
| | Local transport costs<br>$400 per trip per person x 3 persons x 3 trips | 33 | | 3 | | Trips | 400 | 3,600 | 3,600 | | | |
| **Activity 1.4.3** | **Revise model according to suggestions of cooperators** | | | | | | | | | | | |
| | National Consultant | 13 | | 1 | | Month | 1,200 | 1,200 | 1,200 | | | |
| ***Output 1.5*** | ***Working arrangement have been implemented*** | | | | | | | | | | | |
| **Activity 1.5.1** | **Identify enterprises that will participate in the working arrangement** | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Activity 1.5.2** | **Actual implementation of the sub-contracting of builders' woodworks or parts thereof** | | | | | | | | | | | |
| | National Consultant | 13 | | 6 | | Month | 1,200 | 7,200 | | 7,200 | | |
| | Daily Subsistence Allowance | | | | | | | | | | | |
| | Project Leader<br>$65/day x 3 target areas x 4 days per target area | 31.1 | | 12 | | Day | 65 | 780 | | 780 | | |
| | National Consultant<br>$65/day x 3 target areas x 4 days per target area | 31.1 | | 12 | | Day | 65 | 780 | | 780 | | |
| | Other personnel<br>$35/day x 3 target areas x 4 days per target area x 2 persons | 31.3 | | 12 | | Day | 35 | 840 | | 840 | | |
| **Activity 1.5.3** | **Analyze data/information on factors affecting the sub-contracting agreement** | | | | | | | | | | | |
| | National Consultant | 13 | | | 3 | Month | 1,200 | 3,600 | | | 3,600 | |
| **Activity 1.5.4** | **Prepare report on the subcontracting agreement** | | | | | | | | | | | |
| | National Consultant | 13 | | | 3 | Month | 1,200 | 3,600 | | | 3,600 | |

| Outputs/ Activities | Description | Budget Component | Quantity | | | Units | Unit Cost US$ | Total Cost US$ | ITTO | | | Executing Agency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | | | | Year 1 | Year 2 | Year 3 | |
| **Non-activity based costs** | | | | | | | | | | | | |
| | Offices at EA | 41 | 1 | 1 | 0.5 | Year | 1,500 | 3,750 | | | | 3,750 |
| | Utilities | 53 | 1 | 1 | 0.5 | Year | 1,500 | 3,750 | | | | 3,750 |
| | Audit costs | 62 | 1 | 1 | 0.5 | Year | 800 | 2,000 | | | | 2,000 |
| | Project Coordinator | 12.3 | 1 | 1 | 0.5 | Year | 2,053 | 5,132 | | | | 5,132 |
| | Project Bookkeeper | 12.4 | 1 | 1 | 0.5 | Year | 300 | 750 | | | | 750 |
| | Project Accountant | 12.5 | 1 | 1 | 0.5 | Year | 500 | 1,250 | 500 | 500 | 250 | |
| | Spares | 52 | - | 1 | 0.5 | Lot | 1,500 | 2,250 | - | 1,500 | 750 | |
| | | | | | | | | | | | | |

### 3.4.2 Consolidated budget by component

| Category | Description | TOTAL | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|---|
| 10 | ***Personnel*** | | | | |
| 11.1 | Project Leader | 31,120 | 12,448 | 12,448 | 6,224 |
| 11.2 | National Expert | | | | |
| | Wood seasoning | 11,046 | 4,734 | 6,312 | 0 |
| | Preservative treatment | 11,897 | 5,099 | 6,798 | 0 |
| | Assembly and construction techniques | 11,046 | 4,734 | 6,312 | 0 |
| | Wood working machine operation and maintenance | 11,046 | 4,734 | 6,312 | 0 |
| | Finishing techniques | 6,300 | 2,700 | 3,600 | 0 |
| | Material management and inventory control | 11,046 | 4,734 | 6,312 | 0 |
| | Impact assessment | 9,050 | 1,850 | 3,600 | 3,600 |
| 12.1 | Project Assistant | 17,280 | 6,912 | 6,912 | 3,456 |
| 12.2 | Training Coordinator | 4,375 | 0 | 4,375 | 0 |
| 12.3 | Project Coordinator | 5,132 | 2,053 | 2,053 | 1,026 |
| 12.4 | Project Bookkeeper | 750 | 300 | 300 | 150 |
| 12.5 | Project Accountant | 1,250 | 500 | 500 | 250 |
| 13 | National Consultant | 28,800 | 14,400 | 7,200 | 7,200 |
| **19** | **Sub-total** | **160,138** | **65,198** | **73,034** | **21,906** |
| **20** | ***Sub-contracts*** | | | | |
| 21 | Sub-contract for printing of training manuals | 20,000 | 20,000 | | |
| 22 | Sub-contract for editing and lay-outing of manuals | 750 | 750 | | |
| **29** | **Sub-total** | **20,750** | **20,750** | | |
| **30** | ***Travel*** | | | | |
| 31 | Daily subsistence allowance | | | | |
| 31.1 | National experts/ consultants | 40,022 | 5,767 | 30,127 | 4,192 |
| 31.3 | Other personnel | 33,790 | 2,710 | 27,440 | 3,640 |
| 33 | Local transport costs | 42,500 | 4,700 | 30,200 | 7,600 |
| **39** | **Sub-total** | 116,280 | 13,145 | 87,735 | 15,400 |
| **40** | ***Capital Items*** | | | | |
| 41 | Premises | 3,750 | 1,500 | 1,500 | 750 |
| 44 | Capital equipment | | | | |
| 44.1 | Computer equipment | 3,000 | 3,000 | 0 | 0 |
| 44.3 | Multi-media projector with laptop and accessories | 6,000 | 0 | 6,000 | 0 |
| **49** | **Sub-total** | 12,750 | 4,500 | 7,500 | 750 |

| | | | | | |
|---|---|---|---|---|---|
| **50** | ***Consumable items*** | | | | |
| 52 | Spares | 2,250 | 0 | 1,500 | 750 |
| 53 | Utilities | 3,750 | 1,500 | 1,500 | 750 |
| 54 | Office supplies | 3,000 | 1,000 | 1,000 | 1,000 |
| **59** | **Sub-total** | 9,000 | 2,500 | 4,000 | 2,500 |
| **60** | ***Miscellaneous*** | | | | |
| 61 | Sundry | 91,600 | 11,850 | 78,750 | 1,000 |
| 62 | Audit costs | 2,000 | 800 | 800 | 400 |
| 63 | Contingencies | 500 | 0 | 500 | 0 |
| **69** | **Sub-total** | 94,100 | 12,650 | 80,050 | 1,400 |
| **70** | ***National management cost*** | 4,763 | 1,831 | 2,332 | 600 |
| **79** | **Sub-total** | 4,763 | 1,831 | 2,332 | 600 |
| **80** | ***Project monitoring and*** | | | | |
| | ***administration*** | | | | |
| 81 | ITTO monitoring and review | 30,000 | 10,000 | 10,000 | 10,000 |
| 82 | ITTO mid-term evaluation | | | | |
| | ITTO ex-post evaluation | 15,000 | 0 | 0 | 15,000 |
| 83 | ITTO program support costs | 31,879 | 8,469 | 18,654 | 4,756 |
| 84 | Donor monitoring costs | | | | |
| **89** | **Sub-total** | 76,879 | 18,469 | 28,654 | 29,756 |
| **90** | ***Refund of pre-project costs*** | 79,199 | 79,199 | 0 | 0 |
| **99** | **Sub-total** | 79,199 | 79,199 | 0 | 0 |
| **100** | ***GRAND TOTAL*** | 618,859 | 228,242 | 293,305 | 97,312 |

### 3.4.3 ITTO budget by component

| Category | Description | TOTAL | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|---|
| **10** | ***Personnel*** | | | | |
| 11.1 | Project Leader | 18,000 | 7,200 | 7,200 | 3,600 |
| 11.2 | National Expert on | | | | |
| | Wood seasoning | 6,300 | 2,700 | 3,600 | |
| | Preservative treatment | 6,300 | 2,700 | 3,600 | |
| | Assembly and construction techniques | 6,300 | 2,700 | 3,600 | |
| | Wood working machine operation and maintenance | 6,300 | 2,700 | 3,600 | |
| | Finishing techniques | 6,300 | 2,700 | 3,600 | |
| | Material management and inventory control | 6,300 | 2,700 | 3,600 | |
| | Impact assessment | 4,500 | 900 | 1,800 | 1,800 |
| 12.1 | Project Assistant | 17,280 | 6,912 | 6,912 | 3,456 |
| 12.2 | Training Coordinator | 2,475 | | 2,475 | |
| 12.3 | Project Coordinator | | | | |
| 12.4 | Project Bookkeeper | | | | |
| 12.5 | Project Accountant | 1,250 | 500 | 500 | 250 |
| 13 | National Consultant | 28,800 | 14,400 | 7,200 | 7,200 |
| **19** | **Sub-total** | **110,105** | **46,112** | **47,687** | **16,306** |
| **20** | ***Sub-contracts*** | | | | |
| 21 | Sub-contract for printing of training manuals | 20,000 | 20,000 | | |
| 22 | Sub-contract for editing and lay-outing of manuals | 750 | 750 | | |
| **29** | **Sub-total** | **20,750** | **20,750** | | |
| **30** | ***Travel*** | | | | |
| 31 | Daily subsistence allowance | | | | |
| 31.1 | National experts/ consultants | 39,990 | 5,735 | 30,095 | 4,160 |
| 31.3 | Other personnel | 33,790 | 2,710 | 27,440 | 3,640 |
| 33 | Local transport costs | 42,500 | 4,700 | 30,200 | 7,600 |
| **39** | **Sub-total** | **116,280** | **13,145** | **87,735** | **15,400** |
| **40** | ***Capital Items*** | | | | |
| 41 | Premises | | | | |
| 44 | Capital equipment | | | | |
| 44.1 | Computer equipment | 3,000 | 3,000 | | |
| 44.3 | Multi-media projector with laptop and accessories | 6,000 | | 6,000 | |
| **49** | **Sub-total** | **9,000** | **3,000** | **6,000** | |

| | | | | | |
|---|---|---|---|---|---|
| **50** | ***Consumable items*** | | | | |
| 52 | Spares | 2,250 | | 1,500 | 750 |
| 53 | Utilities | | | | |
| 54 | Office supplies | 3,000 | 1,000 | 1,000 | 1,000 |
| **59** | **Sub-total** | **5,250** | **1,000** | **2,500** | **1,750** |
| **60** | ***Miscellaneous*** | | | | |
| 61 | Sundry | 91,600 | 11,850 | 78,750 | 1,000 |
| 62 | Audit costs | | | | |
| 63 | Contingencies | 500 | | 500 | |
| **69** | **Sub-total** | **92,100** | **11,850** | **79,250** | **1,000** |
| **70** | ***National management cost*** | | | | |
| **79** | **Sub-total** | | | | |
| **80** | ***Project monitoring and*** | | | | |
| | ***administration*** | | | | |
| 81 | ITTO monitoring and review | 30,000 | 10,000 | 10,000 | 10,000 |
| 82 | ITTO mid-term evaluation | | | | |
| | ITTO ex-post evaluation | 15,000 | | | 15,000 |
| 83 | ITTO program support costs | 31,879 | 8,469 | 18,654 | 4,756 |
| 84 | Donor monitoring costs | | | | |
| **89** | **Sub-total** | 76,879 | 18,469 | 28,654 | 29,756 |
| **90** | ***Refund of pre-project costs*** | 79,199 | 79,199 | | |
| **99** | **Sub-total** | **79,199** | **79,199** | | |
| **100** | ***GRAND TOTAL*** | **554,563** | **203,525** | **261,826** | **89,212** |

3.4.4 Executing agency budget by component

| Category | Description | TOTAL | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|---|
| **10** | ***Personnel*** | | | | |
| 11.1 | Project Leader | 13,120 | 5,248 | 5,248 | 2,624 |
| 11.2 | National Expert on | | | | |
| | Wood seasoning | 4,746 | 2,034 | 2,712 | |
| | Preservative treatment | 5,597 | 2,399 | 3,198 | |
| | Assembly and construction techniques | 4,746 | 2,034 | 2,712 | |
| | Wood working machine operation and maintenance | 4,746 | 2,034 | 2,712 | |
| | Finishing techniques | | | | |
| | Material management and inventory control | 4,746 | 2,034 | 2,712 | |
| | Impact assessment | 4,550 | 950 | 1,800 | 1,800 |
| 12.1 | Project Assistant | | | | |
| 12.2 | Training Coordinator | 1,900 | | 1,900 | |
| 12.3 | Project Coordinator | 5,132 | 2,053 | 2,053 | 1,026 |
| 12.4 | Project Bookkeeper | 750 | 300 | 300 | 150 |
| 12.5 | Project Accountant | | | | |
| 13 | National Consultant | | | | |
| **19** | **Sub-total** | **50,033** | **19,086** | **25,347** | **5,600** |
| **20** | ***Sub-contracts*** | | | | |
| 21 | Sub-contract for printing of training manuals | 0 | 0 | 0 | 0 |
| 22 | Sub-contract for editing and lay-outing of manuals | 0 | 0 | 0 | 0 |
| **29** | **Sub-total** | **0** | **0** | **0** | **0** |
| **30** | ***Travel*** | | | | |
| 31 | Daily subsistence allowance | | | | |
| 31.1 | National experts/ consultants | 0 | 0 | 0 | 0 |
| 31.3 | Other personnel | 0 | 0 | 0 | 0 |
| 33 | Local transport costs | 0 | 0 | 0 | 0 |
| **39** | **Sub-total** | **0** | **0** | **0** | **0** |
| **40** | ***Capital Items*** | | | | |
| 41 | Premises | 3,750 | 1,500 | 1,500 | 750 |
| 44 | Capital equipment | 0 | 0 | 0 | 0 |
| 44.1 | Computer equipment | 0 | 0 | 0 | 0 |
| 44.3 | Multi-media projector with laptop and accessories | 0 | 0 | 0 | 0 |
| **49** | **Sub-total** | **3,750** | **1,500** | **1,500** | **750** |

| | | | | | |
|---|---|---|---|---|---|
| **50** | ***Consumable items*** | | | | |
| 52 | Spares | 0 | 0 | 0 | 0 |
| 53 | Utilities | 3,750 | 1,500 | 1,500 | 750 |
| 54 | Office supplies | | | | |
| **59** | **Sub-total** | **3,750** | **1,500** | **1,500** | **750** |
| **60** | ***Miscellaneous*** | | | | |
| 61 | Sundry | | | | |
| 62 | Audit costs | 2,000 | 800 | 800 | 400 |
| 63 | Contingencies | | | | |
| **69** | **Sub-total** | **2,000** | **800** | **800** | **400** |
| **70** | ***National management cost*** | 4,763 | 1,831 | 2,332 | 600 |
| **79** | **Sub-total** | **4,763** | **1,831** | **2,332** | **600** |
| **80** | ***Project monitoring and*** | | | | |
| | ***administration*** | | | | |
| 81 | ITTO monitoring and review | | | | |
| 82 | ITTO mid-term evaluation | | | | |
| | ITTO ex-post evaluation | | | | |
| 83 | ITTO program support costs | | | | |
| 84 | Donor monitoring costs | | | | |
| **89** | **Sub-total** | | | | |
| **90** | ***Refund of pre-project costs*** | | | | |
| **99** | **Sub-total** | | | | |
| **100** | ***GRAND TOTAL*** | **64,296** | **24,717** | **31,479** | **8,100** |

## 3.5 Assumptions, risks, sustainability

### 3.5.1 Assumptions and risks

Capability building of the workers of the builders' woodworks industry entails some risks. Among these are:

1. Willingness of employers to allow their workers to participate in the training

   Training of the workers demand that they are willingly allowed by their employers to attend the training sessions and still be paid by them. The time spent by the workers in training entails immediate monetary loss for the owners of the establishments. It is therefore necessary to convince the owners that the loss is temporary and that the training will redound to more profits later because of less wastage of raw materials, higher quality of products and lower cost of production.

   Most operations in the industry are through contract. A worker contracts from the owner of the factory the labor cost of producing an item such as a door. His take home pay therefore depends on how fast he can finish an item given certain considerations such as the quality of the product. The training would take the worker away from his work and will mean loss of income. It is therefore also necessary to convince the worker that the skills he will gain in the training will improve his capacity to produce quality products in a shorter period of time. His gained skills will also allow him to negotiate with the factory owner for higher price for his labor.

2. Quality and effectiveness of training

   The skills that will be acquired by the trainees during the capacity building exercises will depend to a large extent on whether the training modules developed for the purpose will impart the needed training or not. In addition, the workers who will participate in the training will have already different levels of skills. It is necessary to design the modules to closely meet the workers' training requirement. It may be necessary to work with trainers from the larger producers in preparing the training modules and have these modules pre-tested to a selected small group of workers.

   The other dimension of the training is the effectiveness of the delivery of the training. Researchers and training specialist at the FPRDI who have been conducting trainings for the wood processing industry shall be tapped. They are specialist in this kind of work and therefore have gained proficiency in delivering training. Training specialists from other training providers and agencies may also be tapped for the conduct of capacity building programs for the industry.

   This existing competence can also be complemented by experts available and provided by the ancillary industries such as manufacturers of machineries, glue/adhesives, chemical preservatives and finishes.

3. Willingness of the large builders' woodworks industry manufacturers to participate in the training of workers of the micro and small enterprises

   While the large industry manufacturers of builders' woodworks have indicated their willingness to be part of the capacity building program for workers in the micro and small-scale in meetings during the pre-project, it is important to secure their assistance during the implementation of the main project. It is necessary to emphasize that a robust micro and small-scale sub-sector of the

industry is necessary to the larger sub-sector as potential source of laborers, if the need arises. They could also be an important partner in sub-contracting the production of certain items whenever it may become necessary to do so.

4. Willingness of the large builders' woodworks industry manufacturers to participate in sub-contracting the production of certain items or parts of builders' woodworks.

5. Readiness of the beneficiaries especially the smaller producers to practice or apply the knowledge and skills acquired during the training courses.

   Experience in industry manpower development programs clearly show, in many cases, the non-adoption of technical and related information imparted in trainings, seminars or workshops. Major arguments include infusion of more capital, sustainability of raw material supply and low-end market characteristics. It will be most logical to complement trainings with special sessions that will address the above concerns.

   Likewise, during the implementation of the pre-project a preliminary dialogue with the larger members of the industry had been conducted to sound them off on their willingness to support the development of the micro and small-scale segment of the builders' woodworks industry. All had been supportive to the concept of sub-contracting the production of certain items or part of items if there are identified shops capable of producing high quality products. Again, it may be necessary to persuade them that it will be also to their advantage to sub-contract production of certain items or parts because of the lower labor cost of these micro and small-scale manufacturers, assuming that these are capable of producing high quality products.

### 3.5.2 Sustainability

One of FPRDI's major concerns is the provision of industry manpower development activities in such areas as end-use property requirements, chemical treatment, product assembly and construction and finishing techniques. No less than 30 trainings, seminars and technology demonstrations are conducted annually by FPRDI in different regions of the country. To ensure the sustainability of the activities initiated by the project, FPRDI shall continue with the conduct of the capacity building program developed for the builders' woodworks industry. Training modules developed shall be used in assisting other micro and small firms which were not beneficiaries of the ITTO-funded capacity building program. The standards developed under the pre-project will also be used to determine the training needs of workers in other sectors in the forest-based/wood-using industries.

It is also expected that with the conduct of the capacity building program, the capabilities of future trainors shall be developed. Once workers have been trained, it is expected that the knowledge they gained will be passed on to other workers within their own firms or within their locality.

The model on working arrangements between medium/large and micro/small enterprises that shall be developed by the project can also be replicated in other sectors that FPRDI assists in its provision of technical services.

**Part 4. Implementation Arrangements**

4.1 Organization structure and stakeholder involvement mechanisms

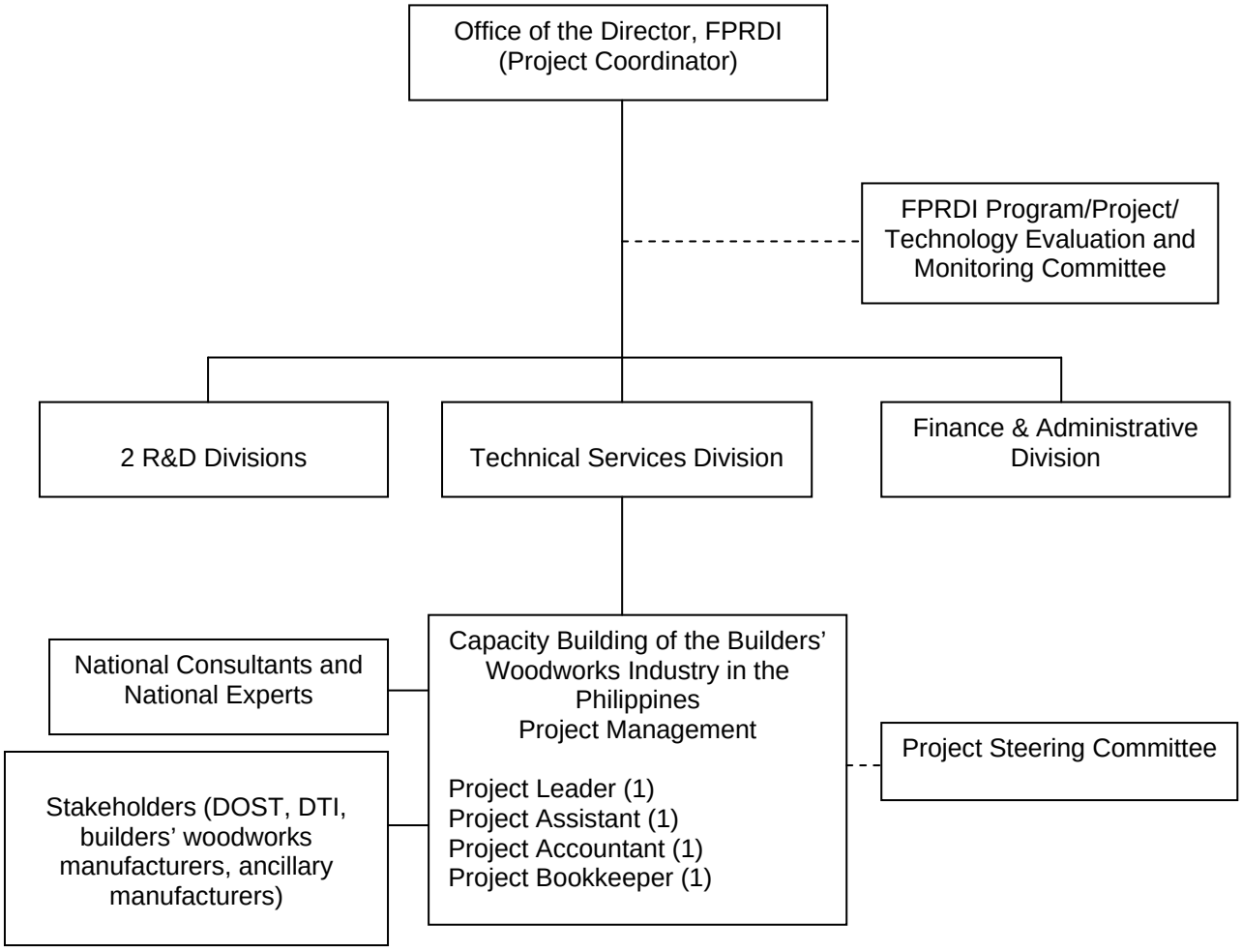



Fig. 3 The project's organization chart

4.1.1 Executing agency and partners

The project will be managed by the Forest Products Research and Development Institute in accordance with ITTO requirements. It will be implemented by the Project Leader with the Director of FPRDI, as the Project Coordinator, providing technical and administrative guidance in the project's activities.

The project shall be working closely with the Regional and Provincial offices of the Department of Science and Technology and the Department of Trade and Industry. Also, the project shall be tapping the technical expertise of ancillary manufacturers that provide inputs to the industry such as manufacturers of finishes, wood working equipment and the like. These experts may be tapped to serve as trainors in various aspects of builders' woodworks manufacture.

4.1.2 Project management team

The project management team will be composed of a Project Leader, a Project Assistant, Accountant and Bookkeeper. The Project Leader shall be responsible for the day-to-day management and implementation of the project, with the Project Assistant providing assistance.

4.1.3 Project steering committee

A Project Steering Committee shall be formed for the project following provisions set forth in ITTO's rules and procedures for project implementation.

4.1.4 Stakeholder involvement mechanisms

The project shall, from time to time, conduct meetings with stakeholders to review the program of training courses to be implemented and to determine what other technical assistances that can be provided to the builders' woodworks industry.

4.2 Reporting, review, monitoring and evaluation

As in all of the Institute's projects, the project shall be monitored and evaluated regularly by the concerned Division where it is administratively situated. Periodic evaluations are also regularly conducted by the Program/Project/Technology Evaluation and Monitoring Committee of FPRDI, a standing committee created by the Institute tasked to conduct periodic assessment of all on-going projects of FPRDI. These evaluations are usually done in July and November annually.

Yearly Plan of Operations (YPOs), bi-annual reports and other project documentation shall be submitted to ITTO as required and through the on-line monitoring system.

4.3 Dissemination and mainstreaming of project learning

4.3.1 Dissemination of project results

Training manuals produced by the project shall be used during the conduct of training courses in the identified target areas. They shall also be used in future training courses conducted after completion of the project.

Training reports prepared shall be made available to interested stakeholders.

4.3.2 Mainstreaming project learning

Experiences obtained in the implementation of the project shall be the basis for improvements in the conduct of training courses for other sectors in the forest-based industry and in the improvement of training manuals and other training materials.

## Annex 1 Profiles of the executing and collaborating agencies

The Forest Products Research and Development Institute (FPRDI) is the research and development arm on forest products utilization of the Department of Science and Technology (DOST), the government agency that coordinates and manages the Philippines' science and technology system. It was established in 1954 as the Forest Products Laboratory (FPL) under the then Bureau of Forestry in response to the need for information and technologies on the utilization of timber resources, as well as non-wood forest products.

On July 3, 1957 FPL was restructured into the Forest Products Research Institute (FPRI) to which FPRDI traces back its founding. It was attached to the University of the Philippines (UP) for administrative purposes by virtue of Executive Order (EO) 257. In 1969 the Institute was reconstituted into the Forest Products Research and Industries Development Commission (FORPRIDECOM) under the National Science Development Board (NSDB). When the NSDB was reconstituted into the National Science and Technology Authority (NSTA) in 1982 thru EO 784, FORPRIDECOM was reorganized into the Forest Products Research and Development Institute (FPRDI), still under NSTA. After the EDSA Revolution, the NSTA was reorganized into the Department of Science and Technology (DOST) in 1987 thru EO 128. FPRDI was retained under DOST without any change in name but with internal structural changes to address the changing needs of the forest-based industries.

Section 23 of EO 128 provides that FPRDI shall:

- Conduct applied research and development on forest products utilization based on the needs of the forest products using and allied industries and the general public;
- Undertake the transfer of completed researches directly to the end-users or via linkage units of other government agencies; and
- Provide technical services and training to various clientele.

FPRDI's research and development programs are implemented through two divisions, the Materials Science Division and the Technology Innovation Division. The Technical Services Division is tasked to carry out all technology transfer activities of the Institute while the Finance and Administrative Division provides the needed logistical support for the 3 division.

For the period 2008 – 2011, the Institute has eight (8) major S&T programs that implement all projects and activities. These are:

a. Material Science
b. Furniture and Handicraft
c. Builder's Woodworks and Structural Components
d. Composite Boards
e. Bio-Energy, Resins and Oils
f. Paper and Paper Products
g. Cleaner Production Technologies
h. Technology Transfer

FPRDI's organizational chart is shown in Figure 4.

FPRDI has also implemented several ITTO-funded projects, the most recent ones being PD 34/99 Rev. 2(I) *Development and Implementation of Stress Grading Rules for Tropical Timber in the Philippines*, PD 36/99 Rev. 4(I) *Processing and Utilization of Almaciga (Agathis philippinensis Warb.) resin as source of industrial chemicals*, PPD 133/07 Rev. 1(I) *Training Needs Analysis for the Builders' Woodworks Industry in the Philippines* and PD 448/07 Rev. 2(I) *Sustainable Utilization and Marketing of Selected Non-Timber Forest Products to Support the Handicraft Industries and the Development of Rural Communities* which is currently on-going.

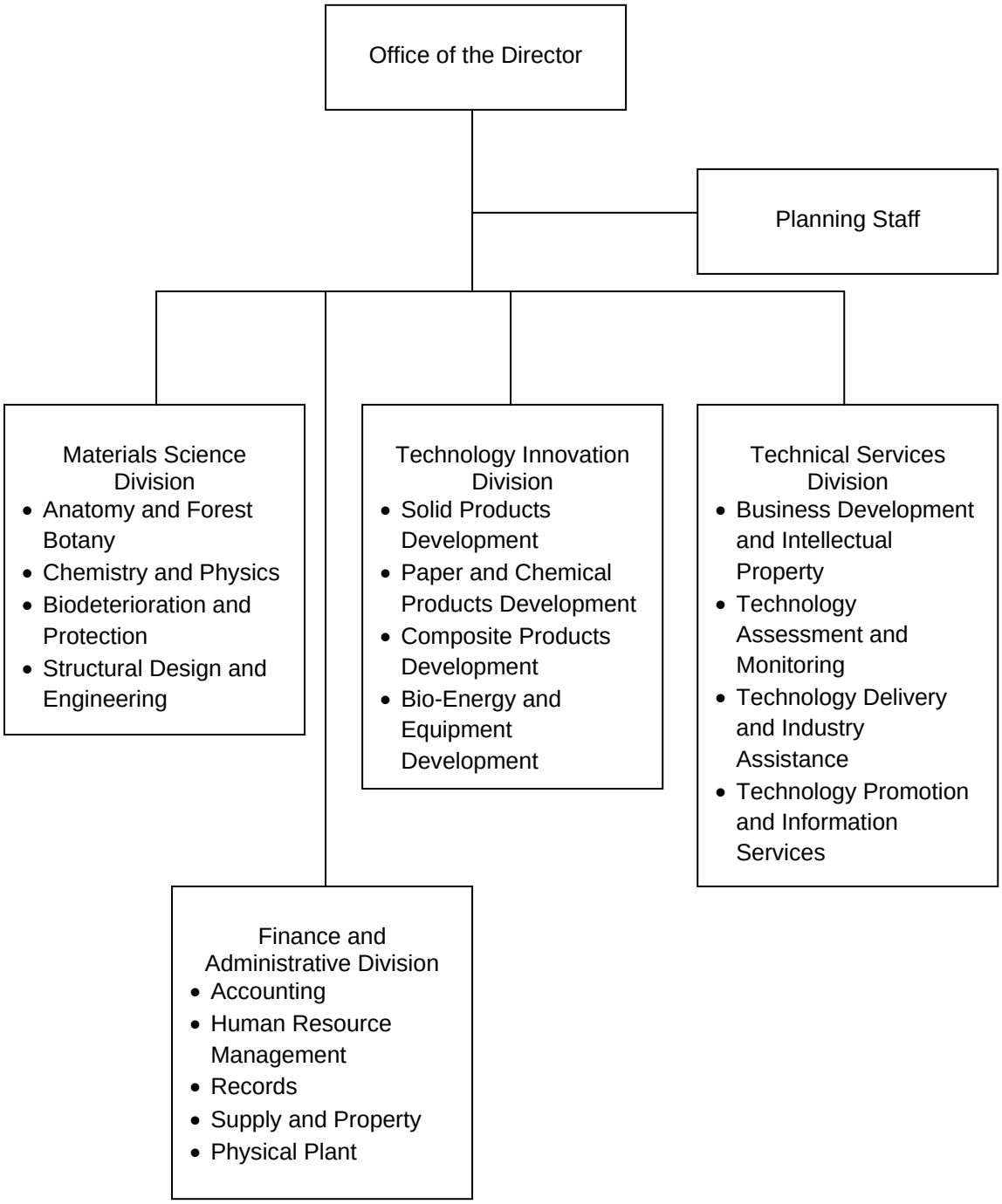



Fig. 4 FPRDI's organizational chart

**Infrastructure of the Executing Agency**

FPRDI has research facilities and laboratories for various areas of wood research such as materials testing; quality control; calibration; wood identification and analysis; minor forest products identification and analysis; chemical analysis; drying; preservation; finishing and machining. It also has testing laboratories for pulp and paper; furniture and plywood.

**Budget**

For CY 2008 – 2010 the Institute had a total budget of ₱ 261,531,000 or US $ 6,538,275.

**Personnel**

As of CY 2010, FPRDI has the following personnel:

- Number of personnel with postgraduate degrees 12
- Number of personnel with graduate degrees 37
- Number of personnel with baccalaureate degrees 76
- Number of technical personnel 116
- Number of administrative personnel 49

**Annex 2: Curricula vitae of personnel provided by executing agency**

**Project Leader**

| | |
|---|---|
| Name of Personnel: | MA. CECILE B. ZAMORA |
| Age: | 51 years old |
| Gender: | Female |
| Professional Education: | PhD (Technology Management) – 2000<br>Technological University of the Philippines<br><br>MS Forestry (Wood Science and Technology/Industrial Management) – 1989<br>University of the Philippines Los Baños<br><br>BS Forest Products Engineering – 1982<br>University of the Philippines Los Baños |
| Position in the present organization: | Senior Science Research Specialist |
| Experience relevant to the project: | Project Leader<br>ITTO PPD 133/07 Rev 1(I)<br>Training Needs Analysis for the Builders' Woodworks Industry in the Philippines |

**Project Coordinator**

| | |
|---|---|
| Name of Personnel: | ROMULO T. AGGANGAN |
| Age: | 53 years old |
| Gender: | Male |
| Professional Education: | PhD (Biological and Environmental Sciences) – 1999<br>Murdoch University, Perth, Western Australia<br><br>MS Forestry (Silviculture and Forest Influences) - 1985<br>University of the Philippines Los Baños<br><br>BS Forestry – 1979<br>University of the Philippines Los Baños |
| Position in the present organization: | Director IV |

**Annex 3: Terms of Reference of Key Personnel and Consultants to be funded by ITTO**

**Terms of Reference for National Consultant (1)**

Duration: 30 months

I. Criteria for Selection:

1. PhD degree in Forest Products Technology or Engineering or equivalent;
2. With relevant experience on forest products utilization;
3. Excellent leadership and interpersonal skills;
4. Excellent written and oral communication skills;
5. Willing to work off office hours and on weekends.

II. Scope of Work

1. Identify possible areas of linkages between micro/small enterprises and medium/large enterprises from raw material sourcing to marketing and how this can help address sustainability of the industry;
2. Prepare a framework on how industry players can integrate;
3. Provide inputs on strategies in implementing complementation among industry players;
4. Provide inputs on the development of training modules and materials;
5. Attend and participate in technical/consultative meetings and dialogues organized by the pre-project; and
6. Perform other functions that may be required by Project Management.

III. Deliverables

1. Protocol on the implementation of complementation among industry players, including areas of linkages, framework on how integration will be done and strategies on how complementation will be done;
2. Reviewed training modules/manuals;
3. Report on the complementation scheme.

## Terms of Reference for National Expert*

Duration: 21 months

I. Criteria for Selection:

1. BS in Engineering and with experience in identified area;
2. At least 5 years experience in rendering technical assistance to the forest-based and allied industries;
3. Excellent written and oral communication skills;
4. Willing to work off office hours and on weekends.

II. Scope of Work

1. To provide inputs for the preparation of training modules and materials;
2. To serve as resource persons in the conduct of training courses;
3. Attend and participate in technical/consultative meetings and dialogues organized by the pre-project; and
4. Perform other functions that may be required by Project Management.

III. Deliverables

1. Manuscript of training modules and materials;
2. Lectures on respective areas of expertise.

* National experts on the following areas:

1. Wood seasoning
2. Preservative treatment
3. Assembly and construction techniques
4. Wood working machine operation and maintenance
5. Finishing techniques
6. Material management and inventory control

## Terms of Reference for National Expert (Impact Assessment)

Duration: 15 months

I. Criteria for Selection:

1. At least BS in Sociology and/or equivalent and with experience in formulation and conduct of impact assessment activities;
2. At least 5 years experience in determining impacts of technology transfer activities to the forest-based and allied industries;
3. Excellent written and oral communication skills;
4. Willing to work off office hours and on weekends.

II. Scope of Work

1. To prepare impact assessment questionnaires;
2. To determine the impacts of the trainings conducted;
3. To prepare reports on the impacts of trainings conducted;
4. Attend and participate in technical/consultative meetings and dialogues organized by the pre-project; and
5. Perform other functions that may be required by Project Management.

III. Deliverables

1. Impact assessment protocol, including questionnaires;
2. Report on impacts of trainings conducted.

## Terms of Reference for Training Coordinator

Duration: 9 months

I. Criteria for Selection:

1. At least BS degree holder;
2. At least 5 years experience in coordinating and conducting training courses for the forest-based and allied industries;
3. Excellent written and oral communication skills;
4. Willing to work off office hours and on weekends.

II. Scope of Work

1. To coordinate the conduct of training courses;
2. To prepare reports on trainings conducted;
3. Attend and participate in technical/consultative meetings and dialogues organized by the pre-project; and
4. Perform other functions that may be required by Project Management.

III. Deliverables

1. Report on trainings conducted.

## Terms of Reference for Project Assistant

Duration: 30 months

I. Criteria for Selection:

1. College graduate;
2. Proficient in MS Office applications (MS Word, Excel and PowerPoint);
3. With knowledge of basic statistical computations;
4. Excellent written and oral communication skills;
5. Preferably based in Los Baños and willing to work outside office hours, on weekends and holidays if necessary.

II. Scope of Work

1. Assists in the preparation of training modules and materials;
2. Assists in the conduct of training courses;
3. Attends to clerical requirements of the project;
4. Perform other functions that may be required by Project Management.