IRAP Guidelines

India
State of Orissa

Integrated Rural Accessibility Planning
Gram Panchayat Level

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Foreword

Within the Indian Government administrative system, Gram Panchayats are responsible for identifying and prioritizing development projects within their areas of jurisdiction. Gram Panchayats need to identify beneficiaries of projects and decide on project locations. Some of the projects identified will be included in the Panchayat "Shelf of Projects" and implemented with local resources, while others will be forwarded to higher level institutions with a request for funding. Development projects include projects in the areas of education, health, water supply and transport.

These Guidelines illustrate how Integrated Rural Accessibility Planning can be used at the Gram Panchayat level to augment the planning process.

Integrated Rural Accessibility Planning (IRAP) consists of a set of planning tools, which can help local government officials in the identification of rural infrastructure projects and associated services. IRAP tools are applied within the existing local level planning process and augment regular planning activities. IRAP tools will assist local officials in identifying investment priorities in the areas of local economic development, education, health, water supply, marketing and transport. The tools are designed to augment existing planning practices and not to replace these.

This *Guideline* describes the different planning tools based on IRAP for use at Gram Panchayat level. A team of ILO and Orissa experts has applied generic IRAP tools in 3 selected Gram Panchayats and has modified the tools for use within the Orissa context. The *Guideline* has been prepared for planners at all levels to inform them about the existence and relevance of the planning tools developed. A how-to-do manual, in Oriya, will accompany this *Guideline*. This manual will consist of step-by-step instructions on how to apply the different tools at Gram Panchayat level.

Contents

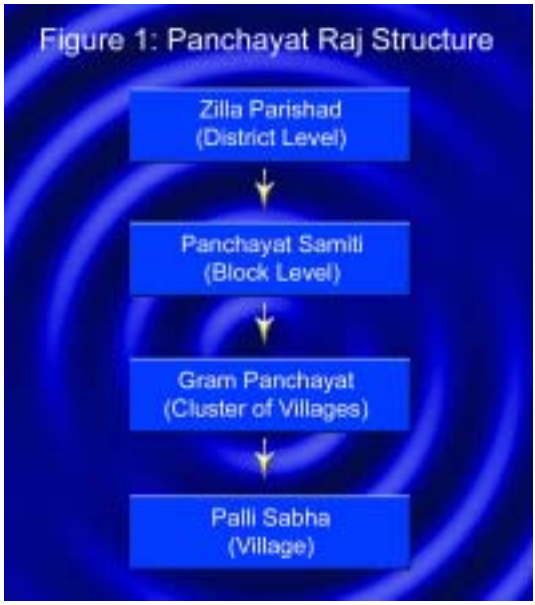
Chapter 1

Planning in the Pachayat Raj System

Planning in the Pachayat Raj System

The 73rd Constitutional Amendment Act, 1992, on Panchayat Raj was an historic event in the evolution of Indian democracy. The amendment provided the necessary powers to the Panchayati Raj institutions to function as institutions of local self-governance and plan and implement schemes for economic development and social justice.

The Panchayati Rai institutions have administrative and financial powers at district level (Zilla Parishad), block level (Panchayat Samiti) and village level (Gram Panchayat).



The Shelf of Projects

All the Panchayati Raj institutions have specific functions for the development of the "Shelf of Projects". The "Shelf of Projects" is a plan for the implementation of projects. In order to develop the "Shelf of Projects", the different institutions need to identify, define and rank the projects. The procedure for the development of the "Shelf of Projects" was described in a letter of the Orissa Panchayat Raj Department to all District Collectors and District Rural Development Agencies, dated 19-12-2002:

"Special Palli Sabha meeting will be convened to identify projects category-wise i.e., buildings, roads, tanks/M.I.Ps/other water bodies, development of water shed areas, afforestation/plantation and other projects according to the local needs. Palli Sabha will prioritize the projects. Gram Panchayat will consolidate the Shelf of Projects of each revenue village approved by Palli Sabha. Gram Panchayat will decide the projects which will be executed by them. They will preferably execute the project estimated cost of which is approximately Rs. 50,000/- or less as per eye estimation. Gram Panchayat will send two copies of Shelf of Projects to Panchayat Samiti, one copy containing list of projects to be executed by Gram Panchayat. The second list will indicate the list of projects to be executed by Panchayat Samiti.

Panchayat Samiti in its meeting will scrutinize the projects. Panchayat Samiti may add new projects in the Shelf of Projects sent by Gram Panchayat. For example, Panchayat Samiti may include G.P. roads, Panchayat Samiti roads, M.I.Ps and other projects which extend to more than one revenue villages. Technical personnel available in the Panchayat Samiti will assess the cost of the projects to be executed by the Panchayat Samiti. Panchayat Samiti will prepare Shelf of Projects of the Block Gram Panchayat wise and send a copy thereof to Zilla Parishad.

Zilla Parishad may scrutinize the Shelf of Projects of the Blocks and may decide to execute some projects by them (Zilla Parishad). They may also add some new projects considering the needs of the people of the district and keeping in the view the funds available with them. Zilla Parishad will prepare the Shelf of Projects to be executed by them and send back a copy to Panchayat Samiti so that Panchayat Samiti will delete the projects (from the Shelf of Projects of Panchayat Samiti) selected by Zilla Parishad for execution.

Care will be taken to ensure that some projects are not included for execution by Gram Panchayat, Panchayat Samiti and Zilla Parishad. For example, if Zilla Parishad chooses to execute certain projects, Panchayat Samiti may exclude such projects from their list. Similarly if Panchayat Samiti chooses to execute certain projects, Gram Panchayat will exclude such projects from the Shelf of Projects of Gram Panchayat."

Tasks of the Panchayat Raj

Projects and programmes for economic development and social justice under the responsibility of the Panchayati Raj institutions include:

1. *Agriculture, including agricultural extension*

2. *Land improvement, implementation of land reforms, land consolidation and soil conservation*
3. *Minor irrigation, water management and watershed development*
4. *Animal husbandry, dairying and poultry*
5. *Fisheries*
6. *Social forestry and farm forestry*
7. *Minor forest produce*
8. *Small scale industries, including food processing industries*
9. *Khadi, village and cottage industries*
10. *Rural housing*
11. *Drinking water*
12. *Fuel and fodder*
13. *Roads, culverts, bridges ferries, waterways and other means of communication*
14. *Rural electrification including distribution of electricity*
15. *Non-conventional energy sources*
16. *Poverty alleviation programme*
17. *Education, including primary and secondary schools*
18. *Technical training and vocational education*
19. *Adult and non-formal education*
20. *Libraries*
21. *Markets and fairs*
22. *Public distribution systems*
23. *Health and sanitation, including hospitals, primary health centres and dispensaries*
24. *Family welfare*
25. *Women and child development*
26. *Social welfare, including welfare of handicapped and mentally retarded*
27. *Welfare of the weaker sections and in particular of the scheduled castes and tribes*
28. *Public distribution system (PDS)*
29. *Maintenance of community assets*

It can be concluded from the list above that the Panchayati Raj institutions have the overall responsibility for social and economic development within their jurisdictions. A large component of projects are related to the development and management of infrastructure. Several of the items listed above include infrastructure components. The Panchayat Raj institutions are given the task to identify and plan these interventions in the most effective and efficient manner.

This document comprises a general *Guideline* to be used by Gram Panchayat officials to support them in the identification and formulation of rural infrastructure projects. The document describes the application of a set of planning tools, termed Integrated Rural Accessibility Planning (IRAP), which is centered around the concept of *Accessibility.*

Chapter 2

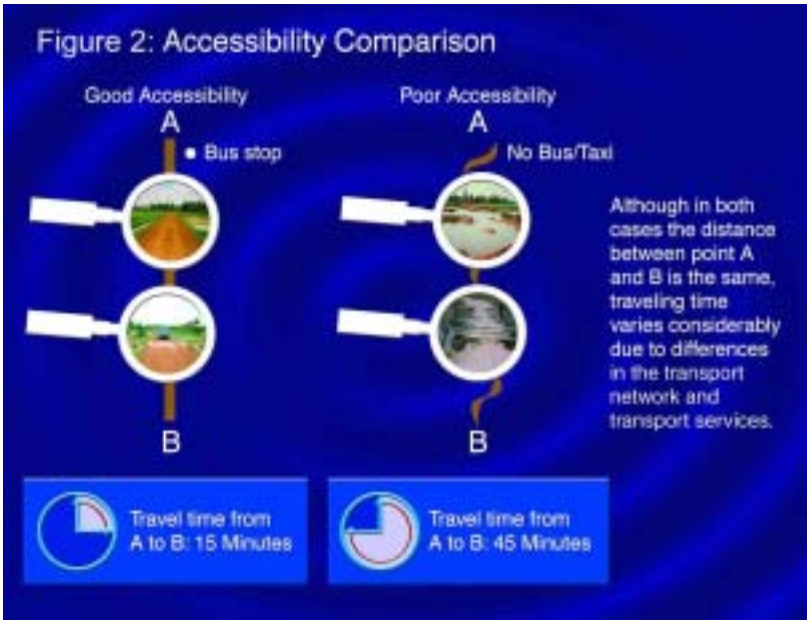
Integrated Rural Accessibility Planning (IRAP)

Integrated Rural Accessibility Planning (IRAP)

All households, rural and urban, poor and rich, need to have access to facilities, goods and services in order to fulfil their basic, social and economic needs and be able to live social and economically productive lives. Access can be defined as the ease or difficulty of reaching locations where facilities, goods and services are available. Integrated Rural Accessibility Planning (IRAP) consists of a number of planning tools for improving access in rural areas.

What is Accessibility?

While it is difficult to give a precise and comprehensive definition of accessibility, it is much easier to explain accessibility by comparing two situations as depicted in Figure 2.



On the left (see Figure 2), good accessibility results from a good road including good bridges and good transport services (taxis, buses). On the right, poor accessibility results from a poor road (sometimes flooded), poor or broken bridges and a lack of transport services. Due to these differences, people undertake different efforts for achieving the same result: to travel or transport from A to B. Accessibility differs and this is reflected in the time needed to travel or the cost and effort involved in traveling.

In the example in Figure 2, point A and B respectively represent the point of departure and the point of destination. As can be seen from Figure 3, point B could relate to locations where the facilities, goods and services, on which households depend, are available. Point A relates to the village where the households live.

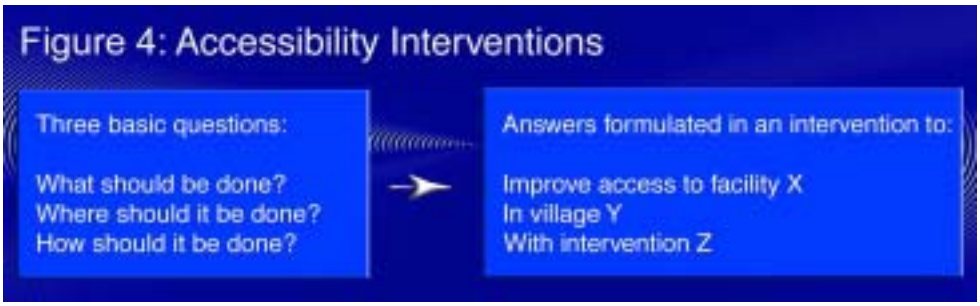
A household's well being depends to a certain extent on their ability to access the necessary goods and services identified in Figure 3. The responsibility of providing access to these goods and services is with local government. It is important that Gram Panchayat institutions serve the population by properly addressing accessibility in their planning system.

Two factors are of importance. Firstly, planning for facilities and services should take place at the Gram Panchayat level where knowledge about the present conditions and constraints in the villages is best.

Secondly, planning should involve all stakeholders, the village representatives to the Gram Panchayat, the Gram Panchayat members including

the Sarpanch, Naiba Sarpanch and the Secretary of the Gram Panchayat. Planning should also involve the Grama Sasan and the Palli Sabha during the identification, prioritization and selection of interventions.

Only by using a participatory approach, appropriate answers can be found to the following three fundamental accessibility questions (see Figure 4).



The general functions of the Gram Panchayat include, amongst others, the identification and prioritization of development projects within the Gram Panchayat. The IRAP tools discussed in this *Guideline* are developed for use at the Gram Panchayat level and would assist the Gram Panchayat in executing these planning tasks.

Integrated Rural Accessibility Planning and the "Shelf of Projects"

Gram Panchayats need to develop a five-year "Shelf of Projects" which involves the identification, ranking and programming of projects and other development activities. Projects should contribute to social and economic development in the area under the jurisdiction of the Gram Panchayat. In order to identify priority projects for improving rural accessibility, the Gram Panchayat needs to have an adequate overview of access and infrastructure constraints hampering social and economic development.

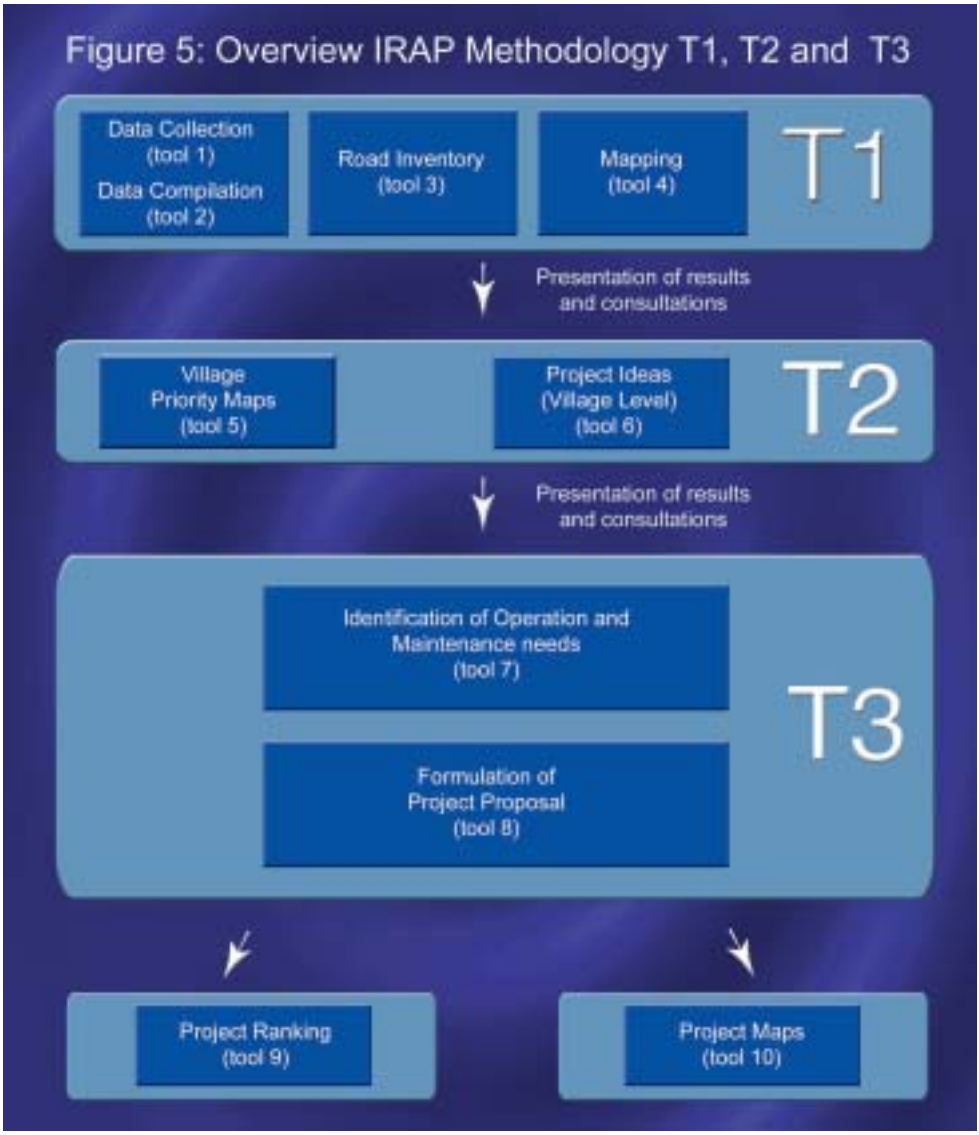
The activities that need to be carried out by the Gram Panchayat to produce the "Shelf of Projects" are grouped into three main categories:

- *Data collection and mapping*
- *Describing the size and severity of the problems and analyzing the causes of the problems*
- *Identification, ranking and programming of projects*

IRAP tools have been developed in Orissa to facilitate the three tasks outlined above. The tools will assist villages and Gram Panchayat officials to jointly identify and prioritize access problems and to identify appropriate interventions for improving access to services and facilities, while making maximum use of local resources.

IRAP seeks to strengthen the existing planning practices at Gram Panchayat level by introducing new techniques and procedures to improve specific planning activities related to rural accessibility such as data collection techniques, mapping procedures, techniques for priority setting, etc.

IRAP focuses on the villages, and measures the access needs of rural households in terms of time and effort. The main aim of using IRAP as a planning tool is to identify problems rural households encounter in accessing services and goods (Figure 3), and prioritize interventions that will improve access in rural areas. IRAP is not an integrated planning process as such, but consists of separate elements to strengthen the existing planning processes in the Gram Panchayat. These elements are shown in Figure 5 and will be discussed in more detail in the following three chapters.



IRAP is designed for use at the Gram Panchayat level. Resources at this level are limited and consequently the planning techniques to be introduced need to be inexpensive when used. Since IRAP activities will be carried out by Gram Panchayat staff, the cost of carrying out the planning exercise is limited to field allowances and travel cost of counterparts and participants in training courses, and some miscellaneous costs.

Overview of the Planning Process at Gram Panchayat Level

The Gram Panchayat Extension Officer trains representatives of the villages (wards) of his/her Gram Panchayat in the collection of data and preparation of village maps. The representatives of the villages (wards) to the Gram Panchayat are encouraged to use a structured questionnaire to collect information. The Gram Panchayat Extension Officer introduces and explains the questionnaire during a short workshop.

The representatives of the villages (wards) conduct group interviews with people in the village to discuss health, education, water supply and transport issues.

Figure 6:

Gram Panchayat Extension Officers visit villages to train village representatives

After the group interview, under guidance of the village (ward) representative, village people will prepare a map of their village. On this map they will indicate the existing infrastructure including the road network and tracks, health and education facilities and existing and potential water supplies. The maps will indicate physical barriers to reach these facilities such as mountains and rivers. The groups will prepare at least two copies.

The village (ward) representative will, once completed, submit the questionnaires and a copy of the village map to the Sarpanch of the Gram Panchayat. The Sarpanch thereupon organizes a meeting of the Gram Panchayat in which the members of the Gram Panchayat will prepare an access map of the Gram Panchayat on basis of the information submitted by the village (ward) representatives. The role of the Gram Panchayat Extension Officer is to train and advice the members of the Gram Panchayat on the production of these Gram Panchayat

maps. After completion of the maps, the Sarpanch of the Gram Panchayat will present the maps to the Grama Sabha for its endorsement.

The Gram Panchayat Extension Officer will thereafter train the village (ward) representatives to calculate the numeric values of the size and severity of access problems on basis of the collected information, maps and standard formulas.

The village (ward) representatives submit a copy of the results of this activity to the Gram Panchayat Sarpanch. The Gram Panchayat will then rank the villages on basis of these results. The villages that meet the standard government norms are not considered in the ranking process. The Gram Panchayat will provide copies of the village ranking and the necessary background information to the Palli Sabha, Panchayat Samiti, Zilla Parishad, its MLA and all relevant state departments.

Every village (Palli Sabha) with identified access problems (unacceptable situations) will conduct brainstorm sessions in which ideas are generated to improve the situation in the respective villages (wards). The Palli Sabha will thereupon discuss the ideas and will screen them on their feasibility. This will result in the Palli Sabha's "Shelf of Projects".

The village (ward) representative forwards the Palli Sabha's "Shelf of Projects" to the Gram Panchayat Sarpanch who will screen the submitted projects using standard criteria.

The Gram Panchayat will then prepare "eye cost estimates" and make an assessment of the benefits of the projects that passed the screening test. The "eye cost estimates" are based on information provided by the different government departments. To estimate the benefits of the projects, the Gram Panchayat has to first assess which villages will benefit from the projects. The Gram Panchayat will screen the different projects to find out if projects are (partly) overlapping. If so, the Gram Panchayat will select the most efficient projects and exclude lesser efficient projects from funding by removing these from the lists. Sometimes the Gram Panchayat may feel that it needs to alter (merge) some project proposals to achieve synergy between projects. Synergies are most likely when at least one of the projects involves road works.

Visualizing the locations of the different project proposals on the map is often very helpful. Immediately it becomes obvious how costs can be saved though simply combining certain projects. Obviously when projects are merged, their effects will change and it will be necessary to re-assess the project efficiency.

After the Gram Panchayat has decided on the projects it wants to include during the next five years, it needs to decide which projects it

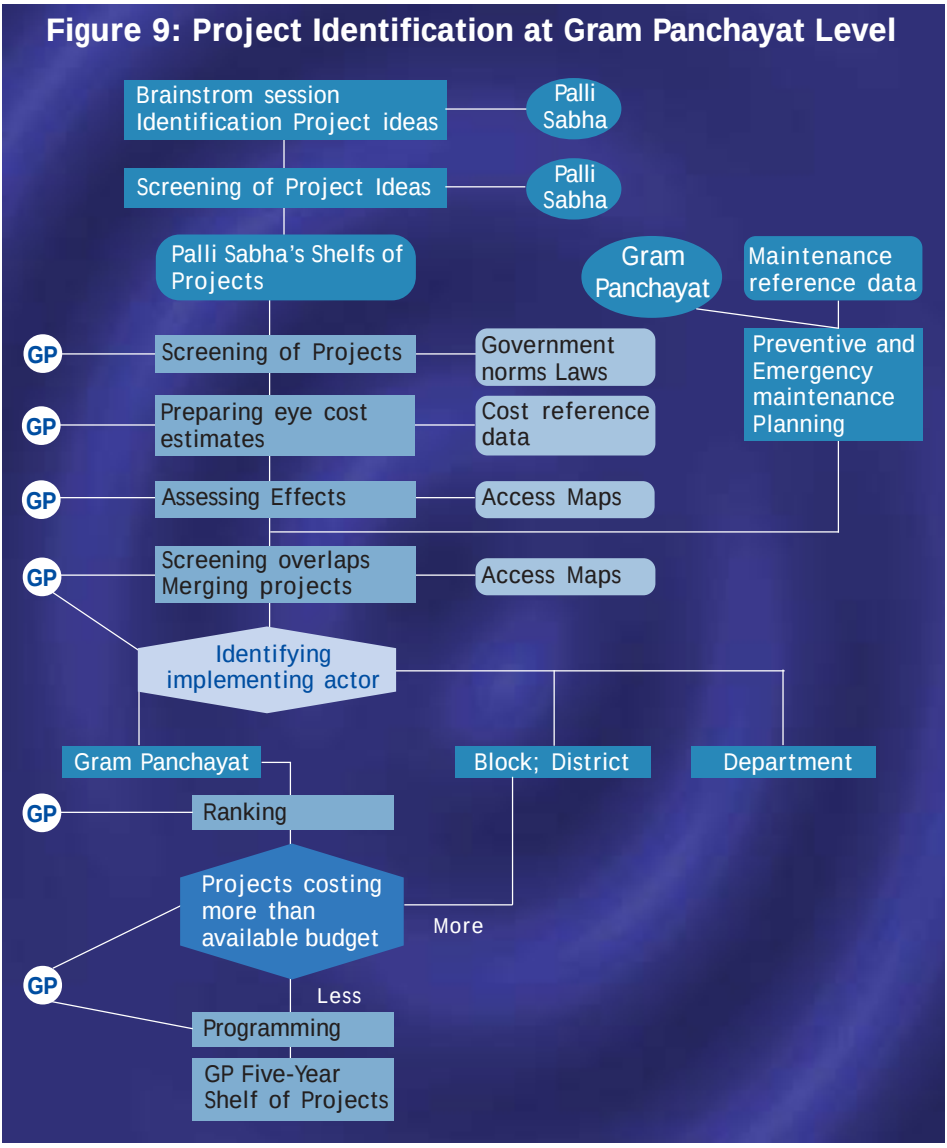
can carry out by itself. The common approach is to first identify projects that can be financed by other government bodies, like the blocks, districts or the different departments. Because its annual budget is limited (about 600,000 rupees), it is unlikely that a Gram Panchayat will be able to finance a project that requires more funds. Projects that cost more and are not the responsibility of a special department will be forwarded to the Block. The Gram Panchayat can also lobby for additional resources from parliamentarians.

The Gram Panchayat will rank the projects that it intends to implement by itself on basis of the projects' relative importance. Priority is given to the routine and recurrent maintenance projects. Next in line are the periodic and emergency maintenance projects. Corrective maintenance and all other projects will be ranked on basis of the project efficiencies. Projects that can not be financed by the Gram Panchayat because of its limited budget will also be forwarded to the Block.

The Gram Panchayat will present these results to the Gram Sabha. The Gram Sabha can ask questions and clarifications and is entitled to suggest amendments to the proposed ranked list. It is the task of the Gram Panchayat to justify and defend its proposed selection of projects and if necessary revise the proposed ranking.

The final step in this planning process at the Gram Panchayat level is to program the projects listed in the Gram Panchayat "Shelf of Projects". This means that the projects are linked to a certain time period, within a period of five years.

Figure 9: Project Identification at Gram Panchayat Level



Chapter3

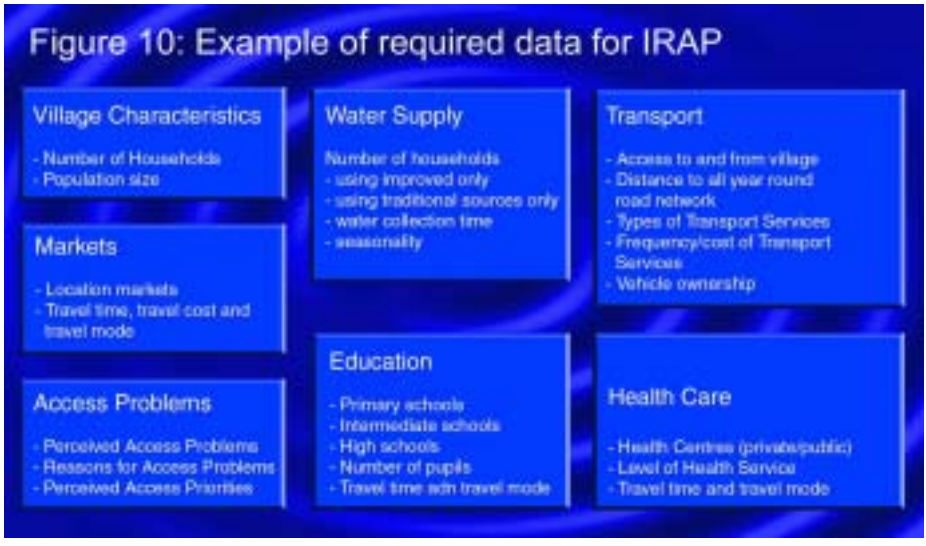
Situation Analysis (T1)

Situation Analysis (T1)

A first step is to carry out a situation analysis that identifies the access problems in the villages comprising the Gram Panchayat; both regarding the mobility of the population and the location and use of services and facilities. T1 comprises various activities, some of which can be done simultaneously, and requires the application of a number of tools.

Tool 1: Data Collection

Specific information is generally required to identify the particular access needs, access constraints and access priorities of rural villages. An example of required data is given in Figure 10 on the next page. Not all of this information is always readily available. The Gram Panchayat staff therefore will need to collect additional data in the villages to complement data that is already available. The proposed questionnaire for collecting this data is attached as Annex 1.



IRAP data is primarily collected at the village level. Data is collected for 6 sectors: local economic development, transport, marketing, education, health and water supply. The data is needed to understand the access characteristics of the communities, to analyze present levels of access and to calculate *Accessibility Indicators*, which will be used in the planning and decision making process.

The Gram Panchayat staff and village representatives are involved in this process and will provide the needed information. It is important to emphasize the need to obtain good quality data. The data will be used as a basis for planning, and the planning may be less effective if the data is inaccurate. Wrong data often results in wrong decisions. Good quality data is defined as being accurate and up to date.

People who will go out to collect the primary data need to have experience in conducting interviews at village level, or need to be trained and instructed properly.

Tool 2: Data Compilation

The computerization of the data can start as soon as the data has been collected from the interviewers and has been reviewed by the Gram Panchayat staff to see if the quality is indeed good enough.

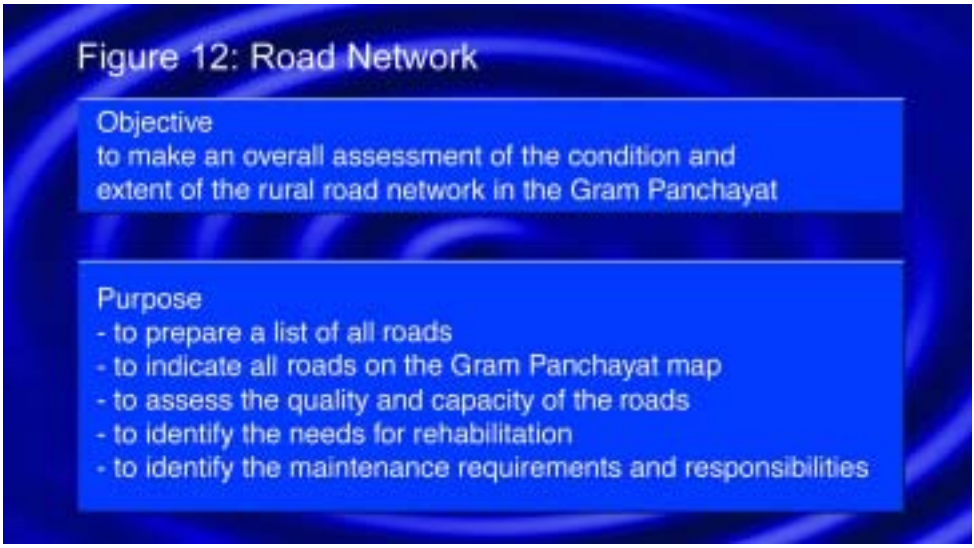
The collected data needs to be compiled into tables presenting the data for the different villages and the Gram Panchayat as a whole. If computers are available, data can be computerized as well. This could be done at Block level for example. Print-outs of the database could be returned to the Gram Panchayats for their planning purposes.

Data needs to be entered into different specially designed data forms presenting the data by sector and geographical area. Microsoft Access and Microsoft Excel are the most appropriate software programs for this.

The *Accessibility Database* is a print out of all the village level data that has been entered in the specially designed data forms. It includes the data by village and a summary of the consolidated data of all villages in the Gram Panchayat. It is recommended that the *Accessibility Database* be updated every 3 years. An example of a Gram Panchayat database is attached as Annex 2.

Tool 3: Rural Road Inventory

Roads are important for providing access. In order to plan for additional and improved roads, the Gram Panchayat staff first needs to know what is already there. The Gram Panchayat staff needs to make an inventory of the existing road network in the Gram Panchayat. This inventory has two main elements: the infrastructure inventory form and the infrastructure inventory overlays.

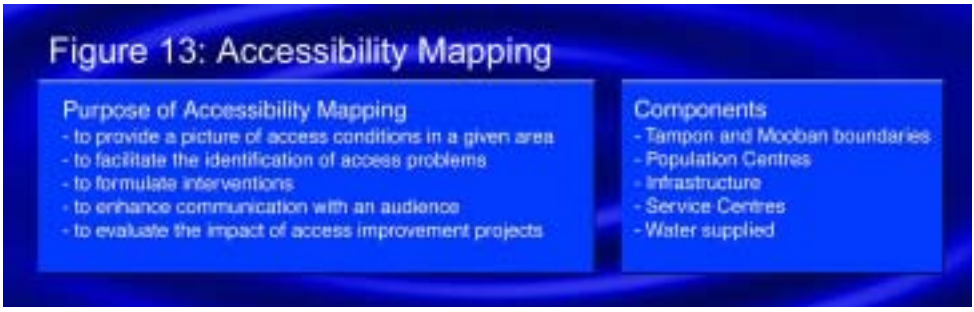


Khallikote Block
Kanaka Gram Panchayat Road Network Map

(i) Road Inventory Form
The infrastructure inventory is primarily based on a form to record data for individual road links. The inventory will include the entire road network within the Gram Panchayat.

The aim of the road inventory is to make an overall assessment of the condition and geographic distribution of the road network in the district. The IRAP road inventory does not provide any technical information on the specific condition of each road link nor provide data on the cost of maintaining or improving existing links. It is a first inventory to generate a rather general picture on the overall status of the (rural) road network. The road inventory together with the village data can be used to prioritize individual road links for maintenance or rehabilitation/construction purposes. It also enables the Gram Panchayat to determine its maintenance requirements. An example of a road inventory is attached as Annex 3.

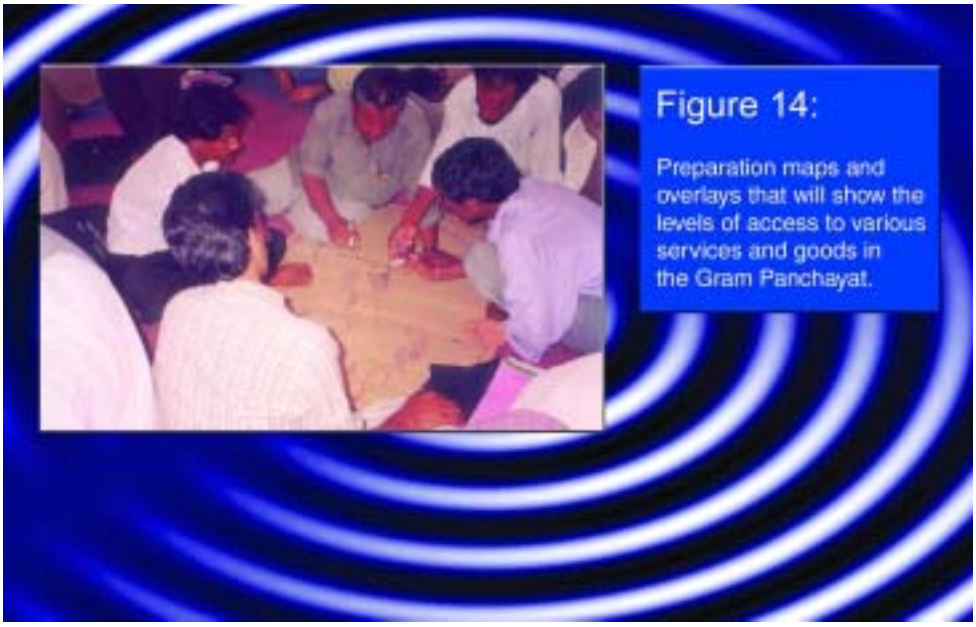
(ii) The Road Overlay
The road key map overlay is a simple road map identifying the different road links and areas served. The road key map could also identify areas that have trail or river access. Roads should be shown by different shaped lines with different colors to identify their classification.



Tool 4: Mapping

Accessibility mapping is an important part of the IRAP procedure. It allows the Gram Panchayat staff to visualize the location of villages and infrastructure within the Gram Panchayat and can help in the identification and prioritization of access problems. It also facilitates the formulation of interventions and guides in the selection of the best development alternatives (see Figure 13).

Colorful, large size maps, visualize access conditions and access priorities in a given area. Maps also facilitate discussions and reactions since it allows the reviewing issues on common grounds.



Maps enable integration of different sector analyses and provide a technical tool to demonstrate how interventions (projects) can be used to solve access problems. Equally, mapping provides a monitoring mechanism for the levels of access within the Gram Panchayat. The IRAP maps need to be based on existing topographic or other official base maps. It is necessary for the Gram Panchayat mapping team to collect additional information and to verify base maps.

Handmade accessibility mapping has been developed as a "user-friendly" process that can be easily understood. The Gram Panchayat staff can prepare good quality maps using inexpensive materials that are locally available.

Usually it is convenient to work with overlays. The base map is the foundation of the presentation, on top of which the overlays will be placed. It provides information about the location of villages, road network, but also physical boundaries for travel like mountains and rivers. The map should consist of different layers. Each layer could contain different information. The base map will contain all the topographic information such as the villages, water bodies and terrain. Overlays could provide specific information on primary education, health, water and transport.

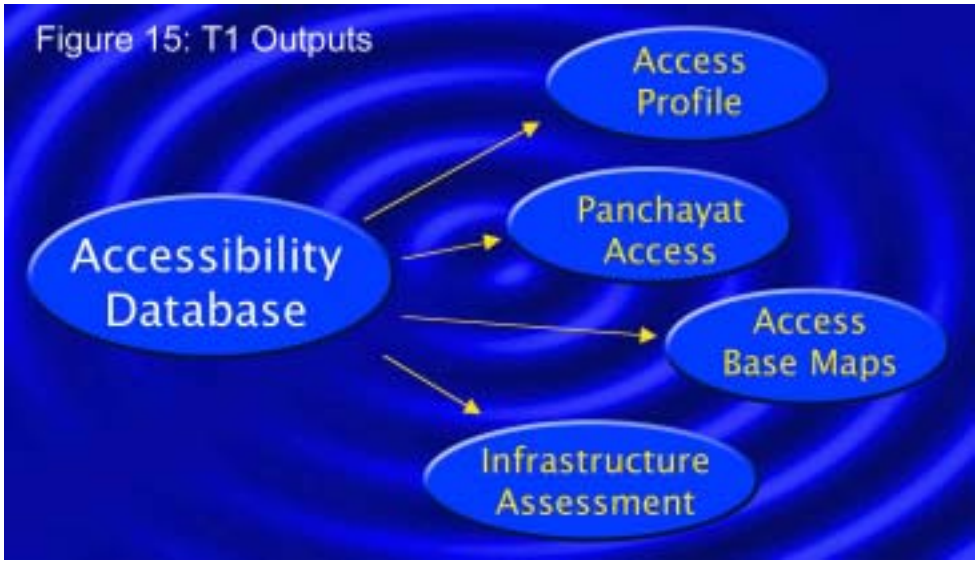
Different layers are put on top of each other and it is therefore important that the layers are made of transparent materials such as plastic. Often large subjects like village areas are colored and, to keep the transparency, the colors should be soft and light. It is equally important that the information on the different layers is not overlapping.

Chapter4

Village Ranking (T2)

Village Ranking (T2)

The first phase of the IRAP application (T1) completes the task of data collection, encoding and processing, data compilation, access maps and infrastructure assessment. The output of T1 is a Gram Panchayat Accessibility Database with base maps for all sectors.



The next activity (T2) will identify village priorities for improving accessibility by sector. This will mostly be done during a prioritization workshop with the participation of Gram Panchayat functionaries and village representatives. It involves the analysis of data, integration of existing government norms for provision of services and facilities, calculation of indicators and preparation of accessibility base maps.

The end result of the T2 phase is a list of priorities by villages and sectors ranked according to their levels of inaccessibility. The identification of priorities can never be an entirely mechanical process based on indicators only. The accessibility data used for problem identification and the accessibility base maps are other important tools to be used for prioritization. Besides, the knowledge and understanding of local characteristics, constraints and realities of the Gram Panchayat,

functionaries and local officials have to play an important role in this process as well.

The output of the first phase of IRAP, the Gram Panchayat database and the base maps as well as road map and road inventory need to be presented before the Gram Panchayat functionaries and village representatives in order to properly inform and sensitize them about the real accessibility situation of the Gram Panchayat. This is needed:

- to conform that the data collected and analyzed is a true representation of the situation in the villages;
- to give the rural community an opportunity to participate in the formulation of their own accessibility profile and identification of the problems.

Calculating village access problems using indicators (see below) and identifying village priorities is to be done by the Gram Panchayat functionaries and village representatives. Since the process involves simple techniques, the group needs to be trained and instructed properly.

A set of training modules and materials has been prepared for the T2 Workshop on Accessibility Indicators and Village Ranking.

Tool 5: Village Accessibility Indicators

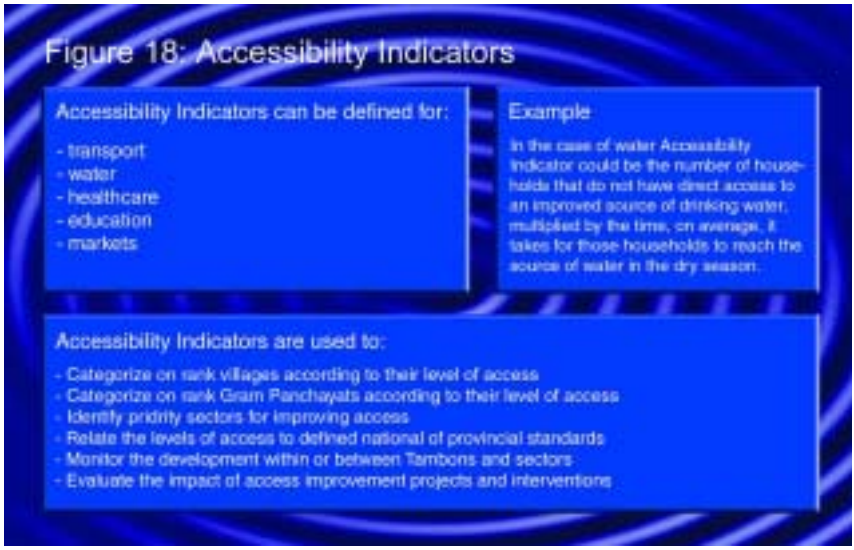
An important element of IRAP is the prioritization of villages where access in different sectors (water, health, education, markets, transport system) needs to be improved. The main tools for identifying the priorities for improving accessibility are the Accessibility Indicators.

Accessibility Indicators will enable a comparison of different levels of accessibility between villages and across sectors for ranking of village priorities based on the existing levels of access.

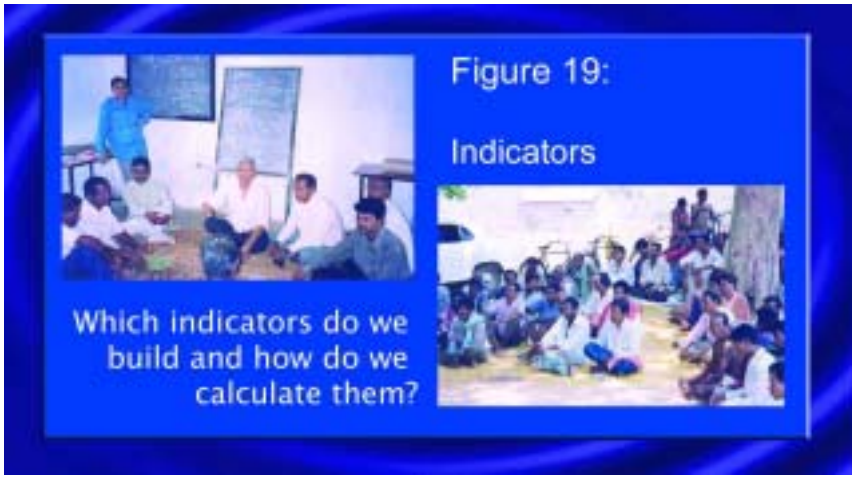
The use of indicators is a common planning tool. These indicators are qualitative or quantitative assessments of different circumstances. Accessibility Indicators show the difficulty or ease with which households in a particular village have access to goods, facilities and services of a certain minimum quality.

Accessibility Indicators generally relate to the number of households affected and levels of accessibility expressed in travel distances and travel times. The indicators are a function of variables such as the number of households in a village, the average time spent to reach each facility/service, the frequency of travel to a facility and selected qualitative characteristics (see Figure 18).

An example of a set of accessibility indicators is attached as Annex 4.



The available information in the database will enable the user to make an initial assessment of the total time, cost and effort requirements for a community in obtaining access to certain goods, services or facilities of a defined quality. The indicators translate the actual level of access into numerical values. The indicators define how difficult it is for a community as a whole to have access. The larger the value of the *Accessibility Indicators*, the worse is the access problem. Indicators will be used to rank villages.



For calculating village access indicators for different sectors, the workshop participants have to complete different worksheets. *Accessibility Indicators* will be calculated for a number of (sub-) sectors including education, health, water supply and marketing. It is necessary

here to emphasize that no indicators will be calculated for roads as roads are an intervention and not an access need as such.

The example below details the calculation of the *Accessibility Indicator* for primary schools. *Accessibility Indicators* are a function of different population, distance/travel time and quality factors. The formula may differ for different sectors but is generally like:

Access Indicator	**=Population Factor**	**+(Travel Time Factor**	*** Quality) Factor**

he population factor depends on the number of people living in a village.

The travel time factor depends on the travel time or distance to a specific facility or service.

The quality factor depends on certain defined government norms and standards. For primary education for example, the government norm is that every village with a population of at least 300 people should have access to a primary school within 1 kilometer. It is assumed that it takes about 15 minutes to walk one kilometer. The school should have at least two teachers and two classrooms. The norms for student/teacher and student/classrooms ratios are 40/1.

A multi-criteria scoring system will be used to qualify population, access and quality aspects. The following scores have been developed in Orissa for this purpose:

population

Population	Score
0-300	1
301-600	2
601-900	3
901 or more	4

travel time

Travel time (minutes)	Score
0-15	0
16-30	1
31-45	2
45-60	3
61 or more	4

number of teachers

Number of Teachers	Score
2 or more	0
1	4

number of classrooms

Nunber of classrooms	Score
2 or more	0
1	2
0	4

student/teacher ratio

Student/teacher ratio	Score
0-40	0
41-50	1
51-60	2
60 or more	4

student/classroom ratio

Student/classroom ratio	Score
0-40	0
41-50	1
51-60	2
60 or more	4

A village with a population of 700 people living 40 minutes walk from a primary school with 4 teachers and 4 classrooms and a student/teacher ratio of 55/1 and a student/classroom ratio of 45/1 will have the following indicator for access to primary schools:

Accessibility Indicator = 3* (2 + 0 + 0 + 2 + 1) = 15

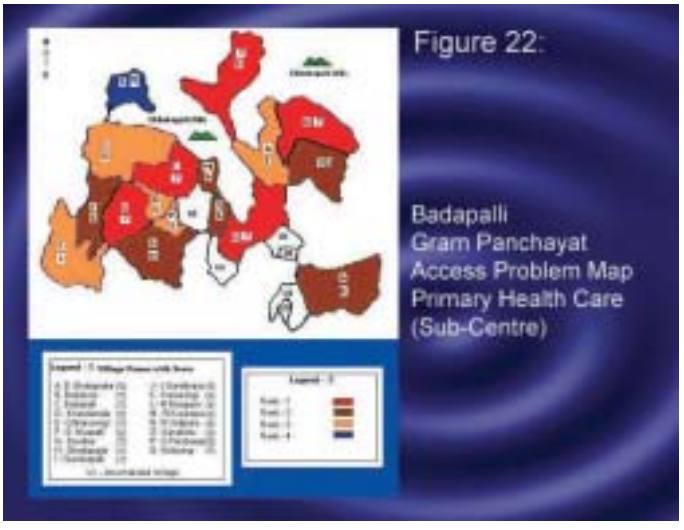
Tool 6: Village Priority Maps

The next step is to visualize the *Accessibility Indicators* and color-code them on maps. Two sets of maps will be prepared:

Figure 21: Preparing Village Priority Maps helps in understanding access problems

- **Sector Problem Map:**

One map for each sector of the Gram Panchayat has to be prepared showing village boundaries and to be colored as per priority ranking. Same color should be used for all the villages of same ranking. It is recommended to use shading from dark to light with the darker colors representing more profound access problems.



- **Combined Problem Map:**

A second map will combine the sector maps and show problem scores and problem ranks of each village for all sectors in different colors. A sample of this map is annexed (Annex 5).

Chapter5

Project Identification and Formulation (T3)

Project Identification and Formulation (T3)

The second phase of the IRAP application (T2) results in a list of priority villages by sector. Villages are ranked according to their access problems. A more pronounced access problem results in a higher rank. Higher ranked villages somehow deserve priority in improving access. The T2 activities do not identify access interventions (the projects needed to improve access). This is the main task during the T3 activity.

The main output of the T3 activity is a list of priority projects improving access in different sectors. Some of these projects can be included in the Gram Panchayat "Shelf of Projects" to be funded out of Gram Panchayat resources while others may have to be forwarded to the Block, District or Government Departments.

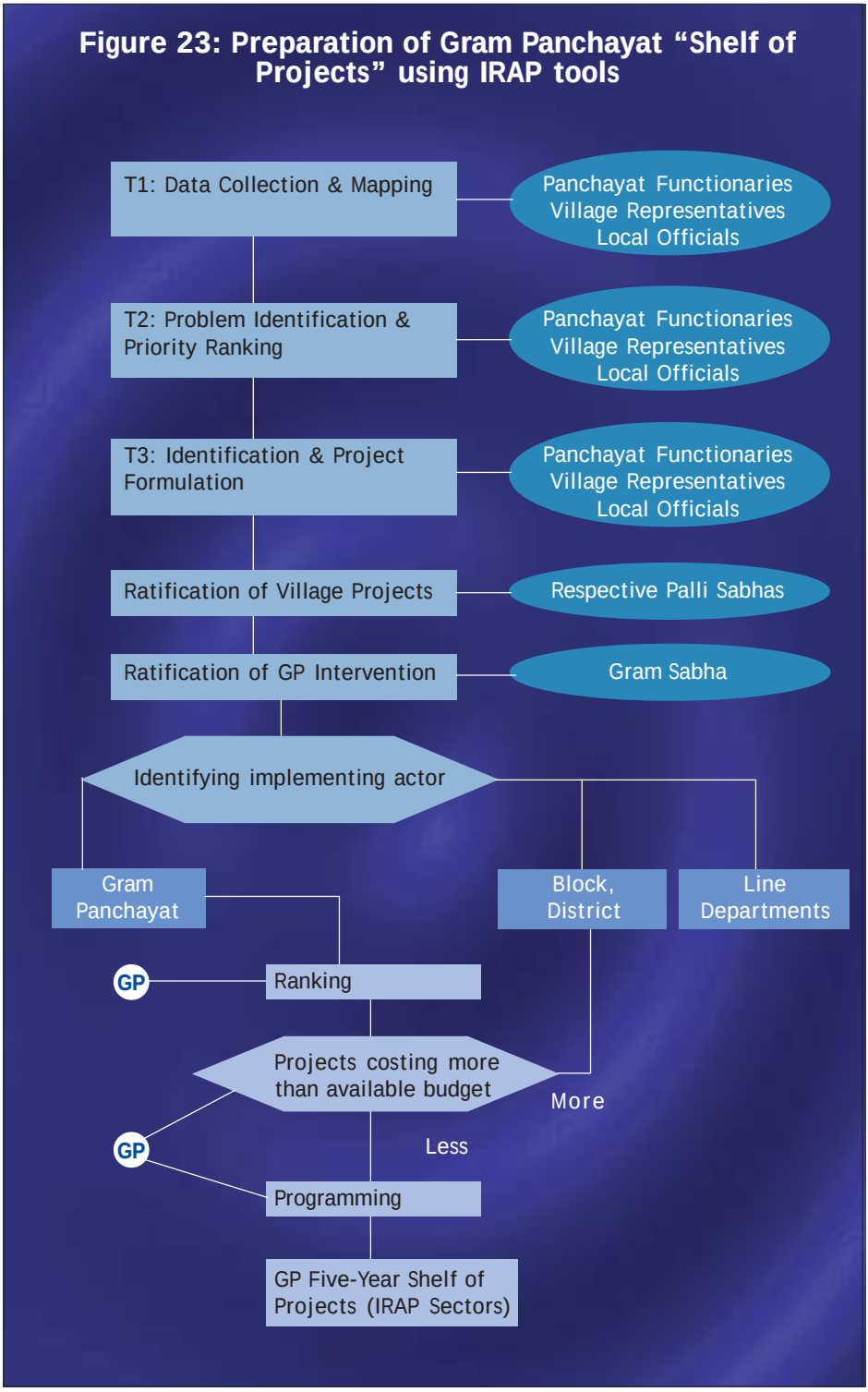
It is important to emphasize here that the IRAP application goes as far as project identification. Decisions on projects to be rejected, taken up by the Gram Panchayat or forwarded to higher level institutions is part of the regular planning process of the Gram Panchayat.

The project identification and formulation process at the Gram Panchayat level, as per provisions of the Orissa Gram Panchayat Act, involves all statutory bodies within the Gram Panchayat like the Palli Sabha (village general body) and Gram Sabha (Panchayat general body). The Gram Sabha will decide on the projects to be undertaken by the Gram Panchayat taking into consideration the recommendations of the Palli Sabha. It is hence important that all bodies are involved during the T3 process of project identification and formulation.

Figure 23 shows the contribution of the different IRAP activities to the local planning process.

The main sectors of concern include education, health and water supply. Projects to improve access are usually undertaken by the concerned line departments although the Gram Panchayat may take up any of the projects if its budget allows for this. The IRAP tools will assist the Gram Panchayat to identify all priority projects in different sectors. It is up to the Gram Sabha to eventually decide which projects will be included in the Gram Panchayat "Shelf of Projects" and which projects will be forwarded to higher authorities.

Figure 23: Preparation of Gram Panchayat "Shelf of Projects" using IRAP tools



Tool 7: Project Ideas at Village Level

Palli Sabhas will brainstorm about possible interventions to improve access in the priority villages. At this stage it is not so important that the project ideas are feasible, it is more important that the villages are given the opportunity to voice their ideas about local development. All ideas should be respected and be treated as feasible. The representative of the Palli Sabha to the Gram Panchayat has the important task to moderate the internal village meeting and to solicit these project ideas.
Some individuals in the village may suggest project ideas, which are unacceptable to the majority of the community or may be conflicting with other project ideas. Through a process of discussions and voting the Palli Sabha will select those projects it would like to be seen implemented. It is important that all these projects selected address accessibility problems in the priority villages.

Tool 8: Project Proposals at Gram Panchayat Level

A workshop will be organized to further develop the project ideas and translate these into project proposals. The outcome of this workshop is a list of projects to either be taken up by the Gram Panchayat itself or to be forwarded to other agencies and departments.

The Gram Panchayat and Palli Sabhas representatives will jointly screen the project ideas generated (see tool 7) and select the most feasible project ideas which will effectively address access problems in priority villages.

The workshop participants will thereupon prepare a so-called "eye cost estimate". This is a very rough estimate of a project's costs based on *a rule of the thumb* figure. Annex 8 presents an example of *rule of the thumb* unit costing. It is important to note that these unit costs need correction from time to time to reflect inflation and should be updated whenever the different departments prepare new *rule of the thumb* unit costs.

Standard worksheets have been prepared for participants to formulate the projects and estimate project costs (Annex 6).

Tool 9: Project Ranking

This activity involves the estimation of benefits for the Gram Panchayat to be able to rank the projects in order of priority. The priority listing will to some extent depend on the project costs and project benefits ratio.

The costs of the different priority projects have been identified during project formulation.

To estimate the benefits of projects, it is necessary to first assess which villages will benefit from a particular project. In other words, it is necessary to assess the catchment area of a project. The catchment area depends to a large extent on the existing transport network (road, rail and waterway). Surrounding villages can only benefit from a new health facility, if the villages are linked to it through a transport network.

Once the numbers of peoples benefiting from specific projects are known it is possible to compare costs with benefits and rank projects by sector. Ranking projects across sectors is more difficult as it is difficult to compare health benefits with education benefits for example.

Tool 10: Project Maps

The last activity involves the preparation of the final project maps identifying all priority projects in the village. Two kinds of maps will be produced.

- *Sector Project Map*
  A map will be produced for each sector showing village boundaries and the location of the proposed interventions. Different colors will be used to identify benefiting villages on the map.

- *Combined Project Map*
  This map will show all interventions planned for the Gram Panchayat.

A sample set of maps is shown below.

Figure 26: Sector Project Map (Badapalli Gram Panchayat) – Access to Elementary Education

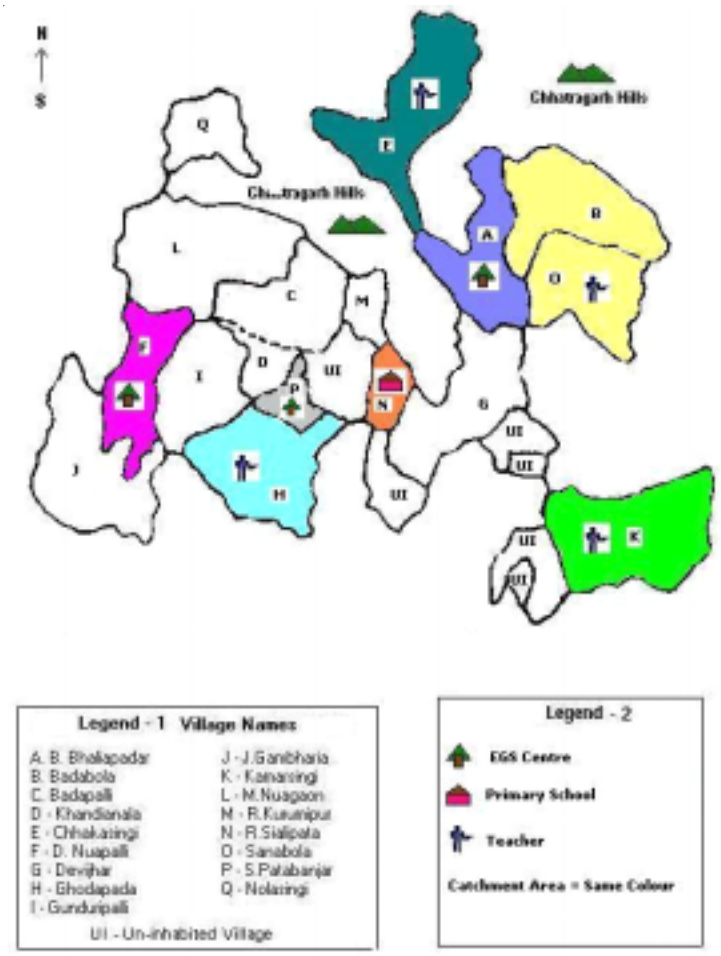
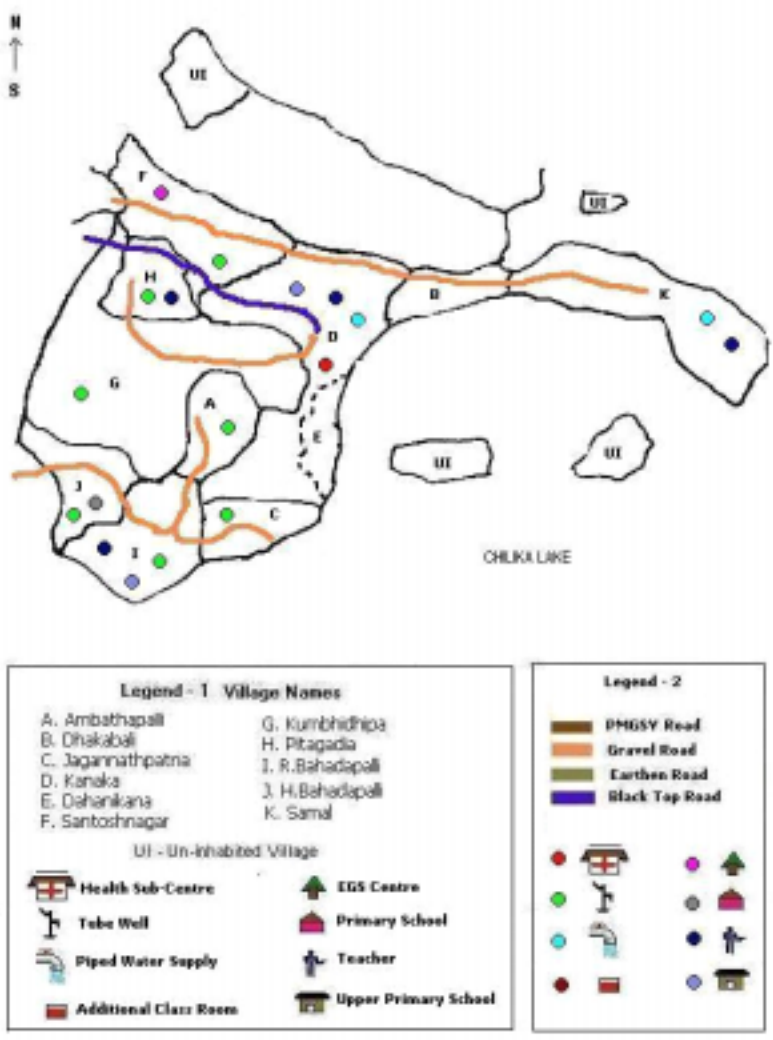


Figure 27: Combined Project Map (Kanaka Gram Panchayat)



Conclusion

Conclusion

Integrated Rural Accessibility Planning (IRAP) consists of a set of planning tools for use at the Gram Panchayat level. It is necessary to reiterate here that IRAP is not a planning process as such. It has been designed to assist local officials to make appropriate investments with the limited resources available to them. The focus on the local level also provides a basis for developing the capacity for planning at the Gram Panchayat level.

The tools discussed in this document would assist Gram Panchayat officials in carrying out some of their planning tasks, in particular identifying access problems, ranking villages according to their access improvement needs and identifying and ranking access improvement projects. The final output of using the different IRAP tools during a sequence of activities (see tools 1 to 10) is a list of priority projects aiming at improving access within the Gram Panchayat.

The final decision on what projects to reject, to include in the Gram Panchayat "Shelf of Projects" or to submit to higher authorities is a decision the Gram Panchayat has to take by itself. It is the task of the Gram Panchayat to justify, defend and if necessary revise the proposed ranking. The Gram Panchayat should be able to explain why more "access-deprived" villages are given more projects. The Gram Panchayat should own the IRAP tools and recognize how they make life easier in terms of identifying rural access projects.

The selection of projects often is a political process in which different communities compete for the scarce resources. Poorer communities often fail in receiving their "fair" share of resources. IRAP tools could assist these communities in justifying the demands of these communities and "strengthening their voice".

The Gram Panchayat also has to do the programming of its overall activities. This will not only include some of the access interventions but will include other projects as well.

Using IRAP tools in inexpensive and only requires limited technical know-how. The IRAP tools cut across sectors and can be used to identify priorities to improve access to primary health care, education, water supplies, the transport system, markets and economic infrastructure. The latter requires some specific tools which are outlined in Annex 7.

Annex 1

Questionnaire

Annex 1: Questionnaire

IRAP PILOT PROJECT - ORISSA
(Khallikote Block, Ganjam District)

VILLAGE SURVEY FORM

Name of the village _____ GP _____

Block _____ District _____

A. Demographic Profile

1. Population (Current)

" Age-wise

0-6 yrs		7-14 yrs		15-35 yrs		36-60 yrs		Above 60		Total	
M	F	M	F	M	F	M	F	M	F	M	F

" Population Composition

Category	Male	Female	Total	% of total pop.
Scheduled Caste (Dalits)				
Scheduled Tribe (Tribals)				
Other Backward Caste (OBC)				
General				

2. Households by Hamlets

Name of the Hamlets	Number of Households Male headed	Female headed	Total
1. _____	_____	_____	____
2. _____	_____	_____	____
3. _____	_____	_____	____
4. _____	_____	_____	____
5. _____	_____	_____	____

3. Households by Land Ownership

No. of landless households: _____

No. of marginal farmers (upto 2.5 acres) households: _____

No. of small farmers (2.5 to 5 acres) households: _____

No. of large farmers (5 acres and above) households: _____

4. Socio-cultural Composition

Ethnic Grouping (Cast-wise)	No. of H.H.	Religion	Total pop	% of total pop.

5. Educational Status

Sl.	Level	Student (School Going)			Non-Student (Dropout 6-14 years)		
		M	F	Total	M	F	Total
1.	Simple Literate						
2.	From III to V						
3.	From VI to VII						

6. Village Infrastructure

A. Educational

Type of Institutions	Govt/ Pvt.	Strength			Type of building	No. of rooms	No. of teachers
		M	F	T			
Angawanwadi Centre							
EGS/NFE/IE Centre							
Primary School/UGME							
ME School							
High School							
Vocational Trg. Centre							
Others (Specify)							

B. Health

Type of institution /Centre Facilities	No. of Staff		Buildings		Equipments	
	Professional	Support	Yes	No	Yes	No
TBA						
ANM Centre						
Dispensary (Allopathic						
/Homeopathic						
/Ayurvedic)						
PHC/CHC/AHC/SHC						
Others (Specify)						
Others (Specify)						

C. Drinking Water Facilities

Category	Nos.	Provided by	Functional/ defunct	Seasonal use
Dug well				
Tube well				
Protected shallow well				
Unprotected shallow well				
Protected Spring				
Unprotected Spring				
Tank / Pond				
River (Open)				
River (Chua)				
Rain water collected				
Piped supply				
Others (specify)				
Other (specify)				

D. Other Infrastructure

Sl.	Types of	Yes/No	Nos
1.	PDS Centre		
2.	Post Office		
3.	Community Centre/Club		
4.	Market Place/Haat		
5.	Place of Worship		
6.	Mill		
7.	No. of Electric/Diesel Water Pump sets		
8.	Others (Specify)		
9.	Others (Specify)		

E. Transport Infrastructure

Type	No. of MoTs	
	Total No.	Functional
Motorized		
Bus		
Minibus		
Truck		
Trekker		
Tractor		
Power Tiller		
Motorcycle		
Scooter		
Moped		
Medium Vehicle (goods transport)		
Light Vehicle		
Non-Motorized		
Rickshaw		
Trolley Rickshaw		
Cycle		
Hand Cart		
Bullock cart		
Others (Specify)		
Others (Specify)		

F. Proposed/Ongoing Community Projects

Name of Project	Type of Project	Source of Funds	Participants	Sector	Start date	Community Contribution	Status	Executing Agency	Date of Completion

7. Village Resources

A. Land

Sl.	Land	Area in Acres
1.	Total cultivable land	
2.	Total Bagayat land	
3.	Total fallow land	
4.	Village forest	
5.	Anabadi	
6.	Gochara	
7.	Homestead land	
8.	Govt. Land	
9.	Others (Specify)	
10.	Others (Specify)	

B. Irrigation

Type. of Project	Nos.	Land covered in acres	Functioning / non-functioning	Provider
Tank				
Tenda (manual lifting)				
Water harvesting structure				
MIP				
L.I. Point				
Others (Specify)				
Others (Specify)				

8. Transport Characteristics

A. Drinking Water

Sl.	Sources	No.	Distance	Temporary shortage period	Time in Minutes	
					Dry	Wet

Means of Transport

Head loading _____, Bhara _____, Ox Cart _____, Bi-Cycle _____,

Trolley _____, Hand Cart _____, Motorized Transport _____, Boat _____,

Others (Pl. specify) _____

Who collects water ?

Men _____ Women _____ Children (Boys_____ Girls _____)

Average No. of trips per day per household: _____

Time involved per trip _____

B. Health

Type	Controlled by	Distance	Main problems	Mode of Transport	Time All-weather/ seasonal (wet/dry)
Hospital					
Community Health Centre					
Primary Health Centre					
New PHC					
Dispensary					
Private clinic					
Homoeopathic dispensary					
Ayurvedic dispensary					
ANM centre					
TBA					
Traditional Health Practitioner					
Others					

Code References:
Controlled by Government (1), Private(2), NGO (3), Missionary (4)
Main Problems: Too far (1), Water Crossing (2), Difficult Terrain(3), Others Specify (4)

C. Education

No	Level	Location	Distance	Run by	Accessibility All-weather seasonal (Dry/wet)	Main Problem	Mode of Transport Mode %	Travel Time	No of Dropouts
1	NFE Center								
2	Primary School / UGME								
3	ME School								
4	High School								
5	+2 College								
6	Degree college								

Access to Educational Institutions

Reasons why children do not go to school at all:

i. School is too far _____ ii. Difficult Terrain _____
iii. River/stream can't be crossed _____ iv. Too few class rooms _____
v. Too few teachers _____ vi. Religion/cultural reasons ____
vii. No money _____ viii. No clothing _____
ix. Others (specify) _____

D. Sanitation

- How many families do have sanitary latrines _____
- How many families do use sanitary latrines _____
- What problem do they face families without sanitary latrines _____
- How do the families dispose garbage/domestic waste _____
- How many families are interested for sanitary latrine _____

E. Cyclone Centre

- Is there any cyclone centre in village _____
- Do the people need a cyclone centre in village ? _____

F. Access to Cereal Processing Units

Type of Mill	Location	Distance	Accessibility All-weather /seasonal	Modes of Transport	Travel Time	Electric /Diesel
Rice Mill						
Flour Mill						
Oil Mill						
Chuda Mill						
Others (Specify)						
Others (Specify)						

G. Access to Agricultural Inputs

Sl.	Source	Location	Distance	Accessibility All-weather /seasonal	Modes of Transport	Travel Time
1.	Govt. Seeds Sale Centre					
2.	Private Seeds Sale Centre					
3.	Fertilizers					
4.	Pesticides					
5.	Tools & Equipments					
6.	Service Cooperative Society					
7.	Milk Society					
8.	Gramya Bank					
9.	Commercial Bank					
10.	VAW Office					
11	Block Agriculture Office					
12.	LI Centre					
13.	Vet. Hospital					
14.	Animal Feeds					
15.	Animal Medicine					
16	Service Centres (Agril)					
17.	Others (Specify)					

H. Access to Market (Selling / Buying)

Sl.	Type	Location	Distance	Accessibility All-weather /seasonal	Mode of Transport	Travel Time	No. of Visits (per month)	Who Visit
A.	Agricultural produce							
B.	Fruits/ Vegetables							
C.	Live Stock							
D.	Minor Forest Produce							
E.	Construction Materials							
F.	Household Materials							
G.	Others							
H.	Others							

I. Social & Administrative Services

Particulars	Location	Distance	Accessibility All-weather / seasonal	Mode of Transport	Travel Time
Judicial Court					
District Office					
Sub-Divisional Office					
Tahasil					
Block					
Police Station					
Outpost					
RI Office					
Forest Ranger					
Forester					
Forest Guard					
Sub-register					
VLW					
TDCC					
Gram Panchayat					
Post Office					
RWSS Office					
NGO					
Place of Worship					
Electric SDO Office					
Electric Section Office					
Nearest Pucca Road					
Nearest Bus Stop					
Others (Specify)					

J. Access Road

❑ Does the village have direct access to the motorable road (tick appropriate answer)

1. Yes, all year round _____
2. Yes, but only in dry season _____
3. No, vehicles do not reach the village _____
4. How do they reach the nearest motorable road ? _____
5. How do they reach nearest Railway Station ? _____
6. How do they reach nearest Boat Stop ? _____
   - Distance _____
   - Time Involved _____

❑ Condition of road from village to motorable road – earth/gravel/ metalled/blacktop

K. Transport Services Used at Motorable Road Point

Sl.	Type	Frequency of Service	Season (Dry/Wet)
1.	Bus		
2.	Trekker		
3.	Mini Bus		
4.	Auto Rickshaw		
5.	Others		

❑ **Means of transport from village to motorable road point:** _____

_____

J. Condition of most important Footpath / tracks in and around the village

Accessibility in Wet Season		*Accessibility in Dry Season*	
1. No problem on foot & Bicycle	____	No problem on foot & Bicycle	____
2. No problem on foot & difficult by Bicycle.	____	No problem on foot & difficult by Bicycle	____
3. Problematic on foot & Impassable by Bicycle.	____	Problematic on foot & Impassable by Bicycle	____

L. Condition of Water Crossings in and around the village

1. Very Problematic _____
2. Problematic _____
3. Sometimes Problematic _____
4. No Problem _____

L. Access Problems & Priorities

Access Problem in Sector	Problem ranking	Access Problem Related to				
		Distance	Number	Quality	Infrastructure	Mobility
Drinking water						
Health Services						
Education						
Cooking fuel						
Market						
Farm Land						
Grinding Mill						
Public Transport service						
Farm Input						
Road Network						
Others						

Problem Ranking Reference Code:

Greatest problem (1), Second greatest problem (2), Third greatest problem (3)

M. Select three sectors with greatest access problem

1.

2.

3.

Rank these three in order of importance

First

Second

Third

N. Most effective intervention to solve the above mentioned three problems

Intervention		**Points (Code)**
Improve / Construct	Foot path	_____
Improve / Construct	Access Roads	_____
Improve / Construct	Bridges	_____
Improve / Construct	Tube Well	_____
Build new health centre		_____
Improve quality of health centre		_____
Build new school		_____
Improve quality of education		_____
Establish new market place		_____
Establish new woodlot		_____
Establish new transport service		_____
Establish new grinding mill		_____
Making available IMTs (Intermediate Means of Transport)		_____
Others _____		_____
Others _____		_____

Points Reference Code: 3 points = Reducing all three access problems,
2 points = Reducing two access problems,
1 point = Reducing one access problem.

Comments from Villagers regarding accessibility planning on

1. Health: _____
2. Sanitation: _____
3. Markets: _____
4. Education: _____
5. Transportation: _____
6. Roads: _____
7. Electricity: _____
8. Fuel Wood: _____

What are the main Issues / Constraints that affect the implementation of project by communities in the village

1.
2.
3.
4.
5.

Interviewer's general remarks

Particulars of Interviewees

Name:	Designation if any
1.	
2.	
3.	
4.	
5.	

Particulars of Interviewers

Name:	Designation	Signature

Date:

Annex 2

Gram Panchayat Data Base

Annex 2: Gram Panchayat Data Base

IRAP Pilot Project in Orissa Gram Panchayat: **Kanaka**

1. Demography

1.1 Household

Sl.	Village	Total Household	Male Headed	Female Headed
1 (1)	Ambathapalli	73	73	-
2 (2)	Dhakabali	23	23	-
3 (3)	Jagannathpatna	62	62	-
4 (4)	Kanaka (Revenue Village)	239	235	4
(5)	1) Dahanikana (Hamlet)	9	9	-
(6)	2) Santosnagar (Hamlet)	41	38	3
5 (7)	Kumbhidhipa	52	49	3
6 (8)	Pitagadia	57	54	3
7	Bahadapalli (Revenue Village)			
(9)	1) R.Bahadapalli (Hamlet)	157	148	9
(10)	2) H.Bahadapalli (Hamlet)	112	90	22
8(11)	Samal	270	259	11
	Total	**1095**	**1040**	**55**

1.2 Population

Sl.	Village	Total Population	Male	Female
1 (1)	Ambathapalli	296	166	136
2 (2)	Dhakabali	130	71	59
3 (3)	Jagannathpatna	346	183	163
4 (4)	Kanaka (Revenue Village)	1250	627	623
(5)	1) Dahanikana (Hamlet)	36	22	14
(6)	2) Santosnagar (Hamlet)	238	126	112
5 (7)	Kumbhidhipa	225	116	109
6 (8)	Pitagadia	244	128	116
7	Bahadapalli (Revenue Village)			
(9)	1) R.Bahadapalli (Hamlet)	929	476	453
(10)	2) H.Bahadapalli (Hamlet)	496	259	237
8(11)	Samal	1735	909	826
	Total	***5925***	***3083***	***2848***

1.3 Population (Community wise)

Sl.	Village	SC			ST			OBC			General		
		M	F	T	M	F	T	M	F	T	M	F	T
1	Ambathapalli	160	136	296	-	-	-	-	-	-	-	-	-
2	Dhakabali	69	58	127	-	-	-	2	1	3	-	-	-
3	Jagannathpatna	170	150	320	-	-	-	1	1	2	12	12	24
4	Kanaka	14	13	27	-	-	-	579	578	1157	34	32	66
5	Dahanikana	22	14	36	-	-	-	-	-	-	-	-	-
6	Santosnagar	-	-	-	-	-	-	123	109	232	3	3	6
7	Kumbhidhipa	110	103	213	-	-	-	6	6	12	-	-	-
8	Pitagadia	117	111	228	-	-	-	11	5	16	-	-	-
9	R.Bahadapalli	-	-	-	-	-	-	476	453	929	-	-	-
10	H.Bahadapalli	259	237	496	-	-	-	-	-	-	-	-	-
11	Samal	909	826	1735	-	-	-	-	-	-	-	-	-
	Total	**1830**	**1648**	**3478**				**1198**	**1153**	**2351**	**49**	**47**	**96**

1. Sector Accessibility Data

2.1 (a) Education

Village	Edn. Type	Inside the village	Beyond the village	Govt/ Pvt.	Strength	Type of Building	No. of Rooms	No. of Teachers	No. of school going children	Mode of transport	Travel time	Access D	Access W	Distance
Ambatha Palli	UP School	✓	-	G	28	Asb	2	2	20	FW	10m	✓	✓	100mtr
	ME School	-	✓	G	225	Pucca	5	4	8	FW	1hr	✓	-	3kms
	High School	-	✓	G	221	Pucca	5	7	3	FW	1hr	✓	-	3kms
Dhakab ali	UP School	-	✓	G	150	Asb	4	3	12	FW	30m	✓	✓	1km
	ME School	-	✓	G	46	Asb	2	2	2	FW	30m	✓	✓	1km
	High School	-	✓	G	221	Pucca	5	7	-	FW/Cy	1.5h		-	5kms
Jagannath Patna	Anganwadi	✓	-	G	26	Asb	1	1	22	FW	10m	✓	✓	50mtr
	UP School	✓	-	G	53	Asb	2	2	43	FW	10m	✓	✓	50mtr
	ME School	-	✓	G	225	Pucca	5	4	5	FW	30m	✓	✓	2kms
	High School	-	✓	G	221	Pucca	5	7	6	FW	30m	✓	✓	2kms
Kanaka	Anganwadi	✓	-	G	54	Pucca	2	1	35	FW	10m	✓	✓	20mtr
	UP School	✓	-	G	221	Asb	4	2	192	FW	10m	✓	✓	200mtr
	ME School	✓	-	P	63	Pucca	2	2	43	FW	10m	✓	✓	200mtr
	High School	-	✓	P	120	Asb	4	8	33	FW	1.5h	✓	-	4kms
Dahani kana	UP School	-	✓	G	221	Asb	4	2	4	FW	25m	✓	-	1km
	ME School	-	✓	P	63	Pucca	2	2	-	FW	25m	✓	-	1km
	High School	-	✓	G	221	Pucca	5	7	2	FW	45m	✓	-	4kms
Santos Nagar	UP School	-	✓	G	221	Asb	7	2	25	FW	30m	✓	✓	1km
	ME School	-	✓	P	63	Pucca	2	2	10	FW	30m	✓	✓	1km
	High School	-	✓	P	120	Asb	4	8	8	FW	1hr	✓	✓	4kms
Kumbhi Dhipa	UP School	-	✓	G	42	Asb	2	1	15	FW	20m	✓	✓	300mtr
	ME School	-	✓	G	56	Asb	2	3	2	FW	20m	✓	✓	400mtr
	High School	-	✓	P	120	Asb	4	8	-	FW	20m	✓	✓	400mtr
Pitagadia	UP School	✓	-	G	42	Asb	2	1	23	FW	10m	✓	✓	200mtr
	ME School	-	✓	G	56	Asb	2	3	4	FW	30m	✓	✓	1km
	High School	-	✓	P	120	Asb	4	8	1	FW	30m	✓	✓	1km
R.Bahada palli	Anganwadi	✓	-	G	33	Asb	1	1	25	FW	10m	✓	✓	100mtr
	UP School	✓	-	G	115	Pucca	2	2	97	FW	10m	✓	✓	100mtr
	ME School	-	✓	G	225	Pucca	5	4	16	FW	20m	✓	✓	1km
	High School	-	✓	G	221	Pucca	5	7	18	FW	20m	✓	✓	1km
H.Bahada Palli	UP School	-	✓	G	156	Asb	4	2	66	FW	30m	✓	✓	1km
	ME School	-	✓	G	225	Pucca	5	4	9	FW	30m	✓	✓	1km
	High School	-	✓	G	221	Pucca	5	7	4	FW	30m	✓	✓	1km
Samal	Anganwadi	✓	-	G	48	Kutcha	2	1	43	FW	15m	✓	✓	200mtr
	UP School	✓	-	G	150	Asb	4	3	135	FW	15m	✓	✓	200mtr
	ME School	✓	-	G	46	Asb	2	2	30	FW	15m	✓	✓	200mtr
	High School	-	✓	P	120	Asb	4	8	15	FW/Cy	1.5hrs	✓	-	5kms

#G – Govt., P. Private, D – Dry, W – Wet, Asb – Asbestos, F.W.- Foot walk, Cy. – Cycle

(b) Accessibility Problem for Education Facilities

Village	Edn. Type	Distance	Water Crossing	All-weather Road	Fair weather Road	Water Ways	Hilly Terrain
Ambatha Palli	UP School	-	-	-	✓	-	-
	ME School	-	✓	✓	✓	-	-
	High School	-	✓	✓	✓	-	-
Dhakabali	UP School	✓	✓	-	✓	✓	-
	ME School	✓	✓	-	✓	✓	-
	High School	✓	✓	-	✓	✓	-
Jagannath Patna	Anganwadi	-	-	✓	✓	-	-
	UP School	-	-	✓	✓	-	-
	ME School	✓	✓	-	✓	✓	-
	High School	✓	✓	-	✓	✓	-
Kanaka	Anganwadi	-	-	-	✓	-	-
	UP School	-	-	-	✓	-	-
	ME School	-	-	-	✓	-	-
	High School	✓	-	✓	✓	-	-
Dahani kana	UP School	-	-	✓	✓	-	-
	ME School	-	-	✓	✓	-	-
	High School	✓	-	✓	✓	-	-
Santos Nagar	UP School	✓	-	✓	✓	-	-
	ME School	✓	-	✓	✓	-	-
	High School	✓	-	✓	✓	-	-
Kumbhi dhipa	UP School	-	-	✓	-	-	-
	ME School	-	-	✓	-	-	-
	High School	-	-	✓	-	-	-
Pitagadia	UP School	-	-	-	-	-	-
	ME School	-	-	✓	-	-	-
	High School	-	-	✓	-	-	-
R.Bahada Palli	Anganwadi	-	-	-	✓	-	-
	UP School	-	-	-	✓	-	-
	ME School	-	-	✓	✓	-	-
	High School	-	-	✓	✓	-	-
H.Bahada Palli	UP School	-	-	✓	✓	-	-
	ME School	-	-	✓	✓	-	-
	High School	-	-	✓	✓	-	-
Samal	Anganwadi	-	-	-	✓	-	-
	UP School	-	-	-	✓	-	-
	ME School	-	-	-	✓	-	-
	High School	✓	✓	-	✓	✓	-

2.2 Health Facilities (Inside the Village)

Village	Type of Service	No. of Staff		Buildings		Equipments	
		Professional	Support	Yes	No	Yes	No
Kanaka	ANM	1	-	-	✓	✓	-
R.Bahadapalli	TBA	1	-	-	✓	✓	-

2.3 Health Facilities (Beyond the Village)

Village	Type	No. of Staff		Buildings		Equipment		Distance	MOT	Time	Access	
		Proff	Support	Yes	No	Yes	No				Wet	Dry
Ambatha	New PHC	1	4	✓	-	✓	-	5kms	FW/Cy	1hr	-	✓
Palli	UG PHC	5	12	✓	-	✓	-	13kms	FW/Cy	3hrs	-	✓
Dhaka bali	New PHC	1	4	✓	-	✓	-	10kms	FW/Cy	2.5hrs	-	✓
	UG PHC	5	12	✓	-	✓	-	14kms	FW/Cy	3hrs	-	✓
Jagannath Patna	New PHC	1	4	✓	-	✓	-	4kms	FW	1hr	-	✓
Kanaka	New PHC	1	4	✓	-	✓	-	8kms	FW/Cy	1.5hrs	-	✓
	UG PHC	5	12	✓	-	✓	-	12kms	FW/Cy	2hrs	-	✓
Dahani kana	New PHC	1	4	✓	-	✓	-	5kms	FW	1hr	-	✓
	UG PHC	5	12	✓	-	✓	-	15kms	FW /Motor	3hrs	-	✓
Santos Nagar	New PHC	1	4	✓	-	✓	-	11kms	FW/Cy	1.5hrs	-	✓
	UG PHC	5	12	✓	-	✓	-	14kms	FW/Cy	3hrs	-	✓
Kumbhi	New PHC	1	4	✓	-	✓	-	5kms	FW/Cy	1hr	✓	✓
Dhipa	UG PHC	5	12	✓	-	✓	-	9kms	FW/Cy	2hrs	✓	✓
PitaGadia	New PHC	1	4	✓	-	✓	-	6kms	FW/Cy /Motor	1hr	✓	✓
	UG PHC	5	12	✓	-	✓	-	10kms	FW/Cy /Motor	1.5hrs	✓	✓
R.Bahada	New PHC	1	4	✓	-	✓	-	4kms	FW/Cy	1hr	-	✓
Palli	UG PHC	5	12	✓	-	✓	-	12kms	FW/Cy	2.5hrs	-	✓
H.Bahada	New PHC	1	4	✓	-	✓	-	4kms	FW	1hr	-	✓
Palli	UG PHC	5	12	✓	-	✓	-	11kms	FW/Cy	2.5hrs	-	✓
Samal	New PHC	1	4	✓	-	✓	-	10kms	FW /Boat	2.5hrs	✓	✓
	UG PHC	5	12	✓	-	✓	-	12kms	FW/Cy	3hrs	-	✓

FW – Foot Walk, Cy - Cycle

2.4 Drinking Water

Village	Category	Nos.	Funct/ Defunct	Season of use	Distance	Time Dry	Time Wet	Trips (HH)	MOT	Who collects	Water Availability
Ambatha Palli	**Traditional** Dug Well	2	F–1Df-1	All	100mtr	10m	10m	8	HL	Fe	July–Apr
	Improved Tube Well	1	F	All	200mtr	15m	15m	8	HL	Fe	All around the year
Dhaka bali	**Traditional** Dug Well	1	F	All	150mtr	15m	15m	8	HL	Fe	July-Apr
	Improved Tube Well	1	F	All	100mtr	10m	10m	8	HL	Fe	All around the year
Jagannath Patna	**Traditional** Dug Well	3	F	All	100mtr	10m	10m	8	HL	Fe	All around the year
	Improved Tube Well	1	F	All	100mtr	10m	10m	8	HL	Fe	All around the year
Kanaka	**Traditional** Dug Well	12	F	All	50mtr	10m	10m	10	HL	Fe	All around the year
	Improved Tube Well	4	F–3 Df–1	All	50mtr	10m	10m	10	HL	Fe	All around the year
Dahani kana	**Traditional** Dug Well	1	F	10months	50m	10m	5m	8-10	HL	Fe	July-Apr
	Improved Tube Well	1	Df	-	-	-	-	-	-	-	-
Santos Nagar	**Traditional** Dug Well	8	F	All	100mtr	10m	10m	10	HL	Fe	July-Mar
	Improved Tube Well	1	F	All	100mtr	10m	10m	10	HL	Fe	All
Kumbhi Dhipa	**Traditional** Dug Well	1	F	All	200mtr	15m	15m	10	HL	Fe	All around the year
	Improved Tube Well	1	Df	-	-	-	-	-	-	-	-
Pitagadia	**Traditional** Dug Well	3	F–1 Df–2	8months	50mtr	10m	10m	10	HL	Fe	July-Feb
	Improved Tube Well	2	F–1 Df-1	All	50mtr	10m	10m	10	HL	Fe	All around the year
R.Bahada Palli	**Traditional** Dug Well	20	F	All	50mtr	10m	5m	8	HL	Fe	July-Mar
	Improved Tube Well	4	F	All	100mtr	10m	10m	8	HL	Fe	July-Apr
H.Bahada Palli	**Traditional** Dug Well	5	F	All	100mtr	10m	10m	8	HL	Fe	July-Apr
	Improved Tube Well	2	F	All	100mtr	10m	10m	8	HL	Fe	All around the year
Samal	**Traditional** Dug Well	2	F-2	All	200mtr	15m	10m	8	HL	Fe	July-Apr
	Improved Tube Well	3	Df-3	-	-	-	-	-	-	-	-
	Protected Shallow Well	1	F	All	100mtr	10m	10m	8	HL	Fe	All

F – function, Df – defunct, HL – head load, Fe - female

***2.4 Electricity* & Fuel**

Village		Electrified Yes	Electrified No	Connecting Distance	Availability	Cost	Travel Time	Frequency
Ambatha palli	a. Electricity	-		2kms	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	2kms	(PDS)	Rs.10	30m	Once a month
Dhakabali	a. Electricity	-		-	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	5kms	(PDS)	Rs.10	1hr	Once a month
Jagannath Patna	a. Electricity		-	-	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	1km	(PDS)	Rs.10	20m	Once a month
Kanaka	a. Electricity		-	-		-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	4kms	(PDS)	Rs.10	1hr	Once a month
Dahanikana	a. Electricity	-		1km	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	2kms	(PDS)	Rs.10	25m	Once a month
Santos Nagar	a. Electricity		-	-		-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	4kms	(PDS)	Rs.10	1hr	Once a month
Kumbhidhipa	a. Electricity	-		300mtr	-	-	-	-
	b. ***Fuel***	-	-	-		-	1hr	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	5kms	(PDS)	Rs.10	1hr	Once a month
Pitagadia	a. Electricity	-		300mtr	-	-	-	-
	b. ***Fuel***	-	-	-		-	1hr	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	5kms	(PDS)	Rs. 10	1hr	Once a month
R.Bahada Palli	a. Electricity		-	-	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	100mtr	(PDS)	Rs.10	10m	Once a month
H.Bahadapalli	a. Electricity		-	-	-	-	-	-
	b. ***Fuel***	-	-	-		-	2hrs	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	1km	(PDS)	Rs.10	20m	Once a month
Samal	a. Electricity		-	-	-	-	-	-
	b. ***Fuel***	-	-	-		-	1hr	Once a week
	1. Fuel Wood							
	2. Kerosene	-	-	6kms	(PDS)	Rs.10	1.5hrs	Once a month

2.4 Sanitation

Sl	Village	Latrine	Garbage management (No of household)	No. of Household Garbage/ Soak Pit
1	Ambathapalli	-	45	-
2	Dhakabali	-	10	-
3	Jagannathpatna	-	25	-
4	Kanaka	3	150	3
5	Dahanikuna	-	4	4
6	Santosnagar	1	35	-
7	Kumbhidhipa	-	25	-
8	Pitagadia	-	20	20
9	R.Bahadapalli	2	120	-
10	H.Bahadapalli	-	85	-
11	Samal	-	Chilika Lake	-
	Total	**6**	**519**	**27**

2.5 Cyclone Shelter

Sl		Existing	Need	Nearest Shelter Location	Distance	Travel Time
1	Ambathapalli	No	Yes	-	-	-
2	Dhakabali	No	Yes	Samal	1km	20m
3	Jagannathpatna	No	Yes	-	-	-
4	Kanaka	No	Yes	-	-	-
5	Dahanikana	No	Yes	-	-	-
6	Santosnagar	No	Yes	-	-	-
7	Kumbhidhipa	No	Yes	-	-	-
8	Pitagadia	No	Yes	-	-	-
9	R.Bahadapalli	No	Yes	-	-	-
10	H.Bahadapalli	No	Yes	-	-	-
11	Samal	Yes	No	Samal	200mtr	15m

2.6 Other Facilities in the Villages

Village	PDS Centre	Community Centre	Club	Market	Post Office	Place for Worship (Nos)	Others
Ambathapalli	-	-	-	-	-	-	-
Dhakabali	-	-	-	-	-	-	-
Jagannathpatna	-	✓	-	-	-	(1)	-
Kanaka	-	-	-	-	✓	(2)	Mill (2) Water Pump(8)
Dahanikuna	-	-	-	-	-	(1)	-
Santosnagar	-	-	-	-	-	-	-
Kumbhidhipa	-	-	-	-	-	-	-
Pitagadia	-	✓	-	-	-	(1)	Water Pump (3)
R.Bahadapalli	✓	✓	-	-	-	(1)	Water Pump (40)
H.Bahadapalli	-	✓	-	-	-	(1)	-
Samal	-	-	-	-	-	(1)	-

2.7 Owned MOTs (village wise)

Village	Motorized								Non-Motorized								
	Lurry (Truck)			M. Cycle / Scooter / Moped			Trekker		Cycle			Cart			Boat		
	T	F	D	T	F	D	F	D	T	F	D	T	F	D	T	F	D
Ambathapalli	-	-	-	-	-	-	-	-	10	8	2	-	-	-	-	-	-
Dhakabali	-	-	-	-	-	-	-	-	8	7	1	-	-	-	4	3	1
Jagannathpatna	-	-	-	-	-	-	-	-	2	2	-	-	-	-	23	23	-
Kanaka	-	-	-	11	11	-	1	-	120	108	12	10	8	2	-	-	-
Dahanikuna	-	-	-	-	-	-	-	-	5	5	-	-	-	-	-	-	-
Santosnagar	1	1	-	1	1	-	-	-	10	8	2	2	2	-	-	-	-
Kumbhidhipa	-	-	-	-	-	-	-	-	6	5	1	-	-	-	-	-	-
Pitagadia	-	-	-	-	-	-	-	-	12	10	2	-	-	-	-	-	-
R.Bahadapalli	1	1	-	5	5	-	1	-	72	60	12	13	11	2	-	-	-
H.Bahadapalli	-	-	-	1	1	-	-	-	25	20	5	2	1	1	-	-	-
Samal	-	-	-	3	3	-	-	-	50	42	8	10	9	1	52	52	-
Total	**2**	**2**	**-**	**21**	**21**	**-**	**2**	**-**	**320**	**275**	**45**	**37**	**31**	**6**	**79**	**78**	**1**

T – Total, F – Function, D – Defunct..

2.8 Market (Buying & Selling)

Village	Type	Location	Distance	Accessibility		Travel time	No. of visits per months (HH)	MOT	Who visits	Travel cost (Rs.)
				Dry	Wet					
Ambatha Palli	Primary	Ambathapalli	150m	✓	✓	10	25	FW	M/Fe	-
	Tertiary	Rambha	5kms	✓	-	1.5hrs	3	FW/Cy	M	-
		Khallikote	13kms	✓	-	3hrs	2	FW/Cy	M	Rs.10
Dhakabali	Primary	Dhakabali	50mtr	✓	✓	5m	20	FW	M/Fe	-
		Samal	1km	✓	✓	30m	20	FW	M	-
	Tertiary	Rambha	10kms	✓	-	2hrs	3	FW/Cy	M	Rs.5
		Kespur	11kms	✓	-	2hrs	2	FW/Cy	M	Rs.5
Jagannath Patna	Primary	Jagannathpatna	50mtr	✓	✓	5m	25	FW	M/Fe	-
	Tertiary	Rambha	4kms	✓	-	1h	2	FW/Cy	M	-
Kanaka	Primary	Kanaka	50mtr	✓	✓	10m	20	FW	M/Fe	-
	Tertiary	Rambha	8kms	✓	-	1hr	2	FW/Cy	M	Rs.6
		Kespur	8kms	✓	-	1hr	4	FW/Cy	M	Rs.6
Dahani kana	Primary	Kanaka	1km	✓	-	20m	10	FW	M	-
	Tertiary	Rambha	5kms	✓	-	1hr	3-4	FW	M	-
		Khallikote	15kms	✓	-	3hrs	1	FW/Mot	M	Rs.10
Santos Nagar	Primary	Kanaka	1km	✓	✓	30m	20	FW	M/Fe	-
	Tertiary	Rambha	11kms	✓	✓	2hrs	3	FW/Cy	M	Rs.6
		Kespur	12kms	✓	✓	2hrs	2	FW/Cy	M	Rs.8
Kumbhi Dhipa	Primary	Kumbhidhipa	100mtr	✓	✓	10m	20	FW	M/Fe	-
	Tertiary	Rambha	5kms	✓	✓	1hr	3	FW/Cy	M	Rs.6
		Kespur	8kms	✓	✓	1.5hrs	2	FW/Cy	M	Rs.6
Pitagadia	Primary	Pitagadia	50mtr	✓	✓	10m	20	FW	M/Fe	-
	Tertiary	Rambha	6kms	✓	✓	1hr	3	FW/Cy	M	-
		Kespur	8kms	✓	✓	1.5hr	2	FW/Cy/Motor	M	Rs.6
R.Bahadapalli	Primary	R.Bahadapalli	100mtr	✓	✓	10m	25	FW	M/Fe	-
	Tertiary	Rambha	5kms	✓	-	1hr	2	FW/Cy	M	Rs.3
H.Bahada Palli	Primary	H.Bahadapalli	50mtr	✓	✓	5m	25	FW	M/Fe	-
	Tertiary	Rambha	4kms	✓	-	1hr	3	FW/Cy	M	-
		Huma	10km	✓	-	2hrs	2	FW/Cy	M	Rs.6
Samal	Primary	Samal	100mtr	✓	✓	10m	25	FW	M/Fe	-
	Tertiary	Rambha	10kms	✓	-	2.5hrs	3	FW/Boat	M	Rs.10
		Kespur	10kms	✓	-	2.5hrs	2	FW/Cy	M	Rs.6

Cereal Processing (village wise)

Village	Cereal	Type		Location	Distance	Accessibility		Travel Time
		Diesel	Elect.			Dry	Wet	
Ambatha Palli	Paddy	-	✓	Rambha	5kms	✓	-	1.5hrs
	Flour & Misc	-	✓	Rambha	5kms	✓	-	1.5hrs
Dhaka bali	Paddy	-	✓	Kanaka	2kms	✓	-	30m
	Flour & Misc	-	✓	Rambha	10kms	✓	-	2hrs
Jagannath Patna	Paddy	-	✓	Sabulia	2kms	✓	-	30m
	Flour & Misc	-	✓	Sabulia	2kms	✓	-	30m
Kanaka	Paddy	-	✓	Kanaka	500mtr	✓	✓	15m
	Flour & Misc	-	✓	Dimiria	3kms	✓	✓	1hr
Dahanikana	Paddy	-	✓	Kanaka	1.5kms	✓	-	25m
	Flour & Misc	-	✓	Kanaka	1.5kms	✓	-	25m
	Oil		✓	Sabulia	4kms	✓	-	45m
Santos Nagar	Paddy	-	✓	Dimiria	3kms	✓	-	1hr
	Flour & Misc	-	✓	Dimiria	3kms	✓	-	1hr
Kumbhi dhipa	Paddy	-	✓	Kanaka	500mtr	✓	✓	25m
	Flour & Misc	-	✓	Rambha	5kms	✓	✓	1hr
Pita Gadia	Paddy	-	✓	Kanaka	1km	✓	✓	20m
	Flour & Misc	-	✓	Rambha	6kms	✓	✓	1.5hrs
R.Bahada Palli	Paddy	-	✓	Sabulia	1km	✓	-	20m
	Flour & Misc	-	✓	Sabulia	1km	✓	-	20m
H.Bahada Palli	Paddy	-	✓	Sabulia	1km	✓	-	25m
	Flour & Misc	-	✓	Sabulia	1km	✓	-	25m
Samal	Paddy	-	✓	Kanaka	3kms	✓	-	40m
	Flour & Misc	-	✓	Dimiria	5kms	✓	-	1hr

2.9 Access from Village to the Core Road Network & Railway Station

a) Road Connectivity

Village	Place	Accessibility			Difficult			Distance	Type				Travel Time	Travel Cost
		All Weather	Fair Weather	Water Way	Water Crossing	Hilly Terrain	Fair Weather		M	E	S	G		
Ambatha Palli	Sabulia	-	✓	-	-	-	✓		✓	✓	-	✓	45m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓		✓	✓	-	✓	45m	Rs.5
Dhakab ali	Dimiria	-	✓	-	-	-	✓	5kms	✓	✓	-	-	1hr	-
	Rly St.													
	Rambha	✓	✓	-	-	-	✓	8kms	✓	✓	✓	✓	1.5hrs	Rs.5
Jagannath Patna	Sabulia	-	✓	-	-	-	✓	2kms	✓	✓	-	-	30m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓	4kms	✓	✓	-	✓	1hr	Rs.5
Kanaka	Dimiria	-	✓	-	-	-	✓	3kms	✓	✓	-	-	1hr	-
	Rly St.													
	Kespur	✓	✓	-	-	-	✓	8kms	✓	✓	✓	-	1hr	Rs.6
Dahani kana	Dimiria	-	✓	-	-	-	✓	4.5kms	✓	✓	-	-	1hr	-
	Sabulia	-	✓	-	-	-	✓	4kms	✓	✓	-	-	45m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓	5kms	✓	✓	-	-	1hr	-
Santos Nagar	Dimiria	-	✓	-	-	-	✓	3kms	✓	-	-	-	40m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓	11kms	✓	-	✓	✓	1hr	Rs.6
Kumbhi Dhipa	Dimiria	-	✓	-	-	-	✓	500mtr	-	-	-	✓	20m	-
	Rly St.													
	Rambha	✓	✓	-	-	-	✓	5kms	-	-	✓	✓	1hr	Rs.6
Pitagadia	Dimiria	-	✓	-	-	-	✓	1kms	✓	✓	-	-	20m	-
	Rly St.													
	Rambha	✓	✓	-	-	-	✓	6kms	✓	✓	✓	-	1.5hrs	Rs.6
R.Bahada palli	Sabulia	-	✓	-	-	-	✓	1km	✓	✓	-	-	20m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓	5kms	✓	✓	-	✓	1hr	-
H.Bahada Palli	Sabulia	-	✓	-	-	-	✓	1km	✓	✓	-	✓	30m	-
	Rly St.													
	Rambha	-	✓	-	-	-	✓	500mtr	✓	✓	-	✓	20m	-
Samal	Dimiria	-	✓	-	✓	-	✓	5kms	✓	✓	-	-	1hr	-
	Rly St.													
	Rambha	-	✓	✓	✓	-	✓	8kms	✓	✓	Water		2hrs	Rs.6

M- Metal, E-Earthern, S-Surface, G-Gravel (Morrum)

b) Transport Services (village wise)

Village	Means of Transport	Availability			Travel Time	Travel Cost
		All Weather	Fair Weather	No. of Service		
Ambathapalli	Cycle	-	✓	10	1hr	-
Dhakabali	Cycle	-	-	8	1hr	-
	Boat	✓	-	4	2hrs	Rs.20
Jagannathpatna	Cycle	-	✓	2	30	-
	Boat	✓	-	23	1hr	Rs.10
Kanaka	Two wheelers	-	✓	11	10m	-
	Cart	-	✓	8	1hr	-
	Cycle	-	✓	108	20m	-
Dahanikana	Cycle	-	✓	5	30m	-
Santoshnagar	Com.. Vehicles	-	✓	1	20m	-
	Two wheelers	-	✓	1	10m	-
	Cart	-	✓	2	30m	-
	Cycle	-	✓	10	1hr	-
Kumbhidhipa	Cycle	✓	-	5	10m	-
Pitagadia	Cycle	-	✓	10	10mnt	-
R.Bahadapalli	Com.. Vehicles	✓	-	1	30m	Rs. 3
	Two wheelers	✓	-	2	20m	-
	Cart	✓	✓	13	1hr	-
	Cycle	-	✓	72	2hrs	-
H.Bahadapalli	Cart	-	✓	2	1hr	-
	Cycle	-	✓	25	30m	-
Samal	Two wheelers	-	✓	3	1hr	-
	Cart	-	✓	10	2hrs	-
	Cycle	-	✓	50	1.5hrs	-
	Boat	-	Waterway	52	1hr	Rs.10

c) Access from village to nearest all-weather road

Village	Place	Accessibility			Difficult			Distance	Type				Travel Time	Travel Cost
		All Weather	Fair Weather	Water Way	Water Crossing	Hilly Terrain	Fair Weather		M	E	S	G		
Ambathapalli	Sabulia	-	✓	-	-	-	✓	3kms	✓		-	✓	45m	-
Dhakabali	Dimiria	-	✓	-	-	-	✓	5kms	✓		-	-	1hr	-
Jagannath Patna	Sabulia	-	✓	-	-	-	✓	2kms	✓		-	-	30m	-
Kanaka	Dimiria	-	✓	-	-	-	✓	3kms	✓		-	-	1hr	-
Dahanikana	Dimiria	-	✓	-	-	-	✓	4.5kms	✓		-	-	1hr	-
	Sabulia	-	✓	-	-	-	✓	4kms	✓		-	-	45m	-
Santosnagar	Dimiria	-	✓	-	-	-	✓	3kms	✓	-	-	✓	1hr	-
Kumbhidhipa	Dimiria	-	✓	-	-	-	✓	500mtr	-	-	-	✓	20m	-
Pitagadia	Dimiria	-	✓	-	-	-	✓	1km	✓	✓	-	-	20m	-
R.Bahada Palli	Sabulia	-	✓	-	-	-	✓	1km	✓	✓	-	✓	20m	-
H.Bahada Palli	Sabulia	-	✓	-	-	-	✓	-	✓	✓	-	✓	30m	-
Samal	Dimiria	-	✓	-	✓	-	✓	5kms	✓	✓	-	-	1hr	-

M- Metal, E-Earthern, S-Surface, G-Gravel (Morrum)

3. Village Perceived Problems and Important

Village	Sector	Access Problems	Access Importance
Ambathapalli	Drinking Water	2	B
	Health facilities	1	A
	Education	1	C
	Electricity	1	D
	Fuel	2	D
	Market	2	E
	Cultivated Land	3	D, E
	Agricultural Inputs	1	A, E
	Transportation	1	E
	Road	1	C
Dhakabali	Drinking Water	1	C
	Health facilities	1	A, E
	Education	1	A, E
	Electricity	1	D
	Fuel	3	D
	Market	1	A, E
	Cultivated Land	3	C
	Agricultural Inputs	1	A, E
	Transportation	1	A, E
	Road	1	C
Jagannathpatna	Drinking Water	1	B, C
	Health facilities	1	A, E
	Education	1	A, E
	Electricity	3	C
	Fuel	2	D
	Market	2	A, E
	Cultivated Land	1	B, C
	Agricultural Inputs	1	A, E
	Transportation	1	E, A
	Road	1	C
Kanaka	Drinking Water	2	C
	Health facilities	1	A
	Education	2	C
	Electricity	1	D
	Fuel	3	D
	Market	2	E
	Cultivated Land	3	D
	Agricultural Inputs	2	D
	Transportation	2	E
	Road	1	C
Dahanikana	Drinking Water	1	C
	Health facilities	1	A, E
	Education	2	A, B, E
	Electricity	1	D
	Fuel	2	D
	Market	2	A, E
	Cultivated Land	2	C
	Agricultural Inputs	3	A, E
	Transportation	1	A, D, E
	Road	1	C
	Railway line crossing	1	D, E
Santoshnagar	Drinking Water	2	B
	Health facilities	1	A
	Education	1	D
	Electricity	-	-
	Fuel	3	D
	Market	3	A
	Cultivated Land	2	C

	Agricultural Inputs	1	A
	Transportation	1	E
	Road	1	C
Kumbhidhipa	Drinking Water	1	B
	Health facilities	2	A
	Education	2	B, C
	Electricity	1	D
	Fuel	2	D
	Market	3	D
	Cultivated Land	2	C
	Agricultural Inputs	3	D
	Transportation	2	E
	Road	2	C
Pitagadia	Drinking Water	1	B
	Health facilities	1	A, E
	Education	2	C
	Electricity	1	D
	Fuel	3	D
	Market	2	E
	Cultivated Land	3	C, D
	Agricultural Inputs	2	A
	Transportation	2	A, D
	Road	2	C
R.Bahadapalli	Drinking Water	3	C
	Health facilities	1	A
	Education	2	C, A, E
	Electricity	3	C
	Fuel	3	D
	Market	2	E
	Cultivated Land	3	B, D, C
	Agricultural Inputs	1	A, E
	Transportation	1	E, A
	Road	1	C
H.Bahadapalli	Drinking Water	3	C
	Health facilities	1	A, E
	Education	1	C
	Electricity	3	C
	Fuel	3	D
	Market	2	A, E
	Cultivated Land	2	C
	Agricultural Inputs	1	A, E
	Transportation	2	E
	Road	1	C
Samal	Drinking Water	1	C
	Health facilities	1	A, E
	Education	2	C, A
	Electricity	3	C, D
	Fuel	2	D
	Market	1	A, E
	Cultivated Land	2	C
	Agricultural Inputs	1	A, E
	Transportation	1	E, A
	Road	1	C

1 : more problem, 2 : problem, 3 : less problem
A: Distance; B: Nos; C: Quality; D: Arrangements; E: Transportation

4. Prioritization of Basic needs (village wise)

Village	Grades	Prioritization of needs	Solution for the needs
Ambathapalli	1 2 3	Drinking water Road Electric	Piped supply Improvement to all-weather road Electrified
Dhakabali	1 2 3	Road Drinking water Health	Improve to all-weather Piped supply Est. of health centre
Jagannath patna	1 2 3	Road Drinking water Health	Construction of new formal road Piped supply Est. of health centre
Kanaka	1 2 3	Road Health Transportation	Improvement Est. of health centre Arrange some transport facility
Dahanikana	1 2 3	Road & Transportation Drinking water Electricity	Construction of roads Inst. of tube well Arrangement
Santoshnagar	1 2 3	Education Road Health	Improve to quality education Improve to all-weather road Est. of health centre
Kumbhidhipa	1 2 3	Drinking water Health Education	Piped supply Est. of health centre Improve to quality education
Pitagadia	1 2 3	Drinking water Education Health	Inst. of tube well Improve to qualitative education Est. of health centre
R.Bahadapalli	1 2 3	Road Education Health	Const. Of all weather road Quality Est. of health centre
H.Bahadapalli	1 2 3	Education Health Road	Qualitative Est. of health centre Improvement to all-weather road
Samal	1 2 3	Road Drinking water Health	Construction of new all weather road Piped supply Est. of health centre

Annex 3

Road Inventory

ROAD INVENTORY

Gram Panchayat: Kanaka — **Block: Khallikote**

Road Link	Origin Destination			Approx. length in Kms	Road Classification	Road Width	Road Condition	Addl Info
	Starts at:	Via:	Ends at:					
Segment Number Core Network Connectivity Segment - A								
NH-5	Nikarada	-	Bahadapali	5kms	National Highway	4 Laning	Black Top	-
Block Road	NH-5	-	Kanaka	3kms	Block Road	3mtr	Earthen	-
Block Road	NH-5	-	Ambatha Palli	4kms	Block Road	3mtr	Earthen	-

Gram Panchayat: Kanaka — **Block: Khallikote**

Road Link	Origin Destination			Approx. length in Kms	Road Classification	Road Width	Road Condition	Addl Info
	Starts at:	Via:	Ends at:					
Segment Number Inter Village Segment - B								
GP Road	NH-Kanaka Road	Santosnagar – Dhakabali	Samal	6kms	GP Road	2mtr	Earthen	-
GP Road	NH-5	Kumbhi Dhipa	Pitagadia	1.5kms	GP Road	3mtr	Earthen	-
GP Road	Sabulia	-	Kanaka	3kms	GP Road	2mtr	Earthen	-
GP Road	Ambathapali Road	-	Sabulia - Kanaka Road	500mtr	GP Road	2mtr	Earthen	-
GP Road	NH-Ambathapali Road	H. Bahadapalli	Sabulia – Kanaka Road	600mtr	GP Road	2mtr	Earthen	-

Annex 4

Accessibility Indicators

Village Access Problem Indicator

Worksheet – 01 (A)

Sector: Primary School (1st to 5th Standard) **Gram Panchayat**: Kanaka **Block**: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Teacher Score		Classroom Score		Student/Teacher Ratio Score		Student/Classroom Ratio Score		Total Score
		Pop.	Score	T.T (Mins. per single trip)	Score	No. of Teacher	Score	No. of Classroom	Score	Student /Teacher Ratio	Score	Student /Classroom Ratio	Score	
1	Ambatha Palli	296	1	10	0	2	0	2	0	28/2	0	28/2	0	1
2	Dhakabali	130	1	30	1	3	0	4	0	150/3	1	150/4	0	3
3	Jagannath Patna	346	2	10	0	2	0	2	0	53/2	0	53/2	0	2
4	Kanaka	1250	4	10	0	2	0	4	0	221/2	4	221/4	2	10
5	Dahanikana	36	1	25	1	2	0	4	0	221/2	4	221/4	2	8
6	Santosh Nagar	238	1	30	1	2	0	4	0	221/2	4	221/4	2	8
7	Kumbhidhipa	225	1	20	1	1	4	2	0	42/1	1	42/2	0	7
8	Pitagadia	244	1	10	0	1	4	2	0	42/1	1	42/2	0	6
9	R. Bahadapalli	929	4	10	0	2	0	2	0	115/2	2	115/2	2	8
10	H. Bahadapalli	496	2	30	1	2	0	4	0	156/2	4	156/4	0	7
11	Samal	1735	4	15	0	3	0	4	0	150/3	1	150/4	0	5

Village Access Problem Indicator

Worksheet – 01 (B)

Sector: Upper Primary School (6th & 7th Standard) **Gram Panchayat**: Kanaka **Block**: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Teacher Score		Classroom Score		Student/Teacher Ratio Score		Student/Classroom Ratio Score		Total Score
		Pop.	Score	T.T (Mins. per single trip)	Score	No. of Teacher	Score	No. of Classroom	Score	Student /Teacher Ratio	Score	Student /Classroom Ratio	Score	
1	Ambatha Palli	296	1	60	2	4	0	5	0	225/4	4	225/5	2	9
2	Dhakabali	130	1	30	0	2	0	2	0	46/2	0	46/2	0	1
3	Jagannath Patna	346	1	30	0	4	0	5	0	225/4	4	225/5	2	7
4	Kanaka	1250	3	10	0	2	0	2	0	63/2	1	63/2	1	5
5	Dahanikana	36	1	25	0	2	0	2	0	63/2	1	63/2	1	3
6	Santosh Nagar	238	1	30	0	2	0	2	0	63/2	1	63/2	1	3
7	Kumbhidhipa	225	1	20	0	3	0	2	0	56/3	0	56/2	0	1
8	Pitagadia	244	1	30	0	3	0	2	0	56/3	0	56/2	0	1
9	R. Bahadapalli	929	2	20	0	4	0	5	0	225/4	4	225/5	2	8
10	H. Bahadapalli	496	1	30	0	4	0	5	0	225/4	4	225/5	2	7
11	Samal	1735	4	15	0	2	0	2	0	46/2	0	46/2	0	4

Village Access Problem Indicator

Worksheet – 01 (C)

Sector: Primary Health Care (Sub-Centre) **Gram Panchayat**: Kanaka **Block**: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Staff Score		Total Score
		Population	Score	Travel Time (Hours per single trip)	Score	No. of Staff	Score	
1	Ambatha Palli	296	2	1	0	1	4	6
2	Dhakabali	130	1	0.5	0	1	4	5
3	Jagannath Patna	346	2	0.75	0	1	4	6
4	Kanaka	1250	4	0.25	0	1	4	8
5	Dahanikana	36	1	0.25	0	1	4	5
6	Santosh Nagar	238	2	0.25	0	1	4	6
7	Kumbhidhipa	225	2	0.75	0	1	4	6
8	Pitagadia	244	2	0.5	0	1	4	6
9	R. Bahadapalli	929	4	0.75	0	1	4	8
10	H. Bahadapalli	496	3	0.75	0	1	4	7
11	Samal	1735	4	0.5	0	1	4	8

Village Access Problem Indicator

Worksheet – 01 (D)

Sector: Primary Health Centre

Gram Panchayat: Kanaka

Block: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Total Score
		Population	Score	Travel Time (Hours per single trip)	Score	
1	Ambatha Palli	296	2	1.25	0	2
2	Dhakabali	130	1	2.5	2	3
3	Jagannath Patna	346	2	1	0	2
4	Kanaka	1250	4	2	0	4
5	Dahanikana	36	1	1.25	0	1
6	Santosh Nagar	238	2	2.75	2	4
7	Kumbhidhipa	225	2	1.25	0	2
8	Pitagadia	244	2	1.5	0	2
9	R. Bahadapalli	929	4	1	0	4
10	H. Bahadapalli	496	3	1	0	3
11	Samal	1735	4	2.5	2	6

Village Access Problem Indicator

Worksheet – 01 (F)

Sector: Drinking Water **Gram Panchayat**: Kanaka **Block**: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Population / Tube Well Score		Total Score
		Population	Score	Travel Time (Minutes per single trip)	Score	Population /Tube Well	Score	
1	Ambatha Palli	296	2	10	0	296/1	2	4
2	Dhakabali	130	1	10	0	130/1	1	2
3	Jagannath Patna	346	3	10	0	346/1	3	6
4	Kanaka	1250	4	10	0	1250/3	3	7
5	Dahanikana	36	1	-	-	36/0	4	5
6	Santosh Nagar	238	2	10	0	238/1	2	4
7	Kumbhidhipa	225	2	-	-	225/0	4	6
8	Pitagadia	244	2	10	0	244/1	2	4
9	R. Bahadapalli	929	4	10	0	929/4	2	6
10	H. Bahadapalli	496	4	10	0	496/2	2	6
11	Samal	1735	4	-	-	1735/0	4	8

T2 Village Access Problem Indicator

Worksheet – 01 (E)

Sector: Community Health Centre **Gram Panchayat**: Kanaka **Block**: Khallikote

Sl.	Village	Population Score		Distance/Travel Time Score		Laboratory Score		X-Ray Score		Beds Score		Total
		Pop.	Score	Travel Time (Hours per single trip)	Score	Laboratory	Score	X-Ray	Score	No. of Beds	Score	Score
1	Ambatha Palli	296	2	3.25	0	1	0	1	0	16	2	4
2	Dhakabali	130	1	3.5	0	1	0	1	0	16	2	3
3	Jagannath Patna	346	2	3.5	0	1	0	1	0	16	2	4
4	Kanaka	1250	4	3	0	1	0	1	0	16	2	6
5	Dahanikana	36	1	3.75	0	1	0	1	0	16	2	3
6	Santosh Nagar	238	2	3.5	0	1	0	1	0	16	2	4
7	Kumbhidhipa	225	2	2.25	0	1	0	1	0	16	2	4
8	Pitagadia	244	2	2.5	0	1	0	1	0	16	2	4
9	R. Bahadapalli	929	4	3	0	1	0	1	0	16	2	6
10	H. Bahadapalli	496	3	2.75	0	1	0	1	0	16	2	5
11	Samal	1735	4	3	0	1	0	1	0	16	2	6

Village Access Problem Indicator: *Method & Formula*

Method:

Sector: Primary School (1st to 5th standard)

Government Norm: Every 300 population should have access to primary school within 1km.

1. Population Score

Population	Score
0 - 300	1
301 - 600	2
601 - 900	3
901 or more	4

2. Distance / Travel Time Score

Travel Time (Minutes per single trip)	Score
0-15	0
16-30	1
31-45	2
46-60	3
61 or more	4

(It takes about 15 minutes to walk 1 km)

3. Quality Score

Government Norms:

- Minimum 2 teachers
- Minimum 2 large class rooms
- Student / Teacher ratio = 40:1
- Student / Classroom ratio = 40:1

a) Teacher Score

No. of Teachers	Score
2	0
1	4

b) Classroom Score

No. of Classrooms	Score
2	0
1	2
0	4

c) Student / Teacher Score

Student / Teacher Ratio	Score
0-40	0
41-50	1
51-60	2
61 or more	4

d) Student / Classroom Score

Student / Classroom Ratio	Score
0-40	0
41-50	1
51-60	2
61 or more	4

Formula for calculating the scoring of problem:

Population Score + Travel Time Score + Quality Score
(Teacher score + classroom score + student / teacher ratio score + student / classroom ratio score) **= Total Score**

Village Access Problem Indicator: Method & Formula

Method:

Sector: Upper Primary School (6th and 7th standards)

Government Norm: Every 500 population should have access to an upper primary school within 3 kms. It takes about 45 minutes to walk a distance of 3 kms.

1. Population Score

Population	Score
0 - 500	1
501 - 1000	2
1001 - 1500	3
1501 or more	4

2. Distance / Travel Time Score

Travel Time (Minutes per single trip)	Score
0 - 45	0
46 - 60	2
61 or more	4

(It takes about 15 minutes to walk 1 km)

3. Quality Score

It depends on 4 factors:

- Minimum 2 teachers
- Minimum 2 large class rooms
- Student / Teacher ratio = 30:1
- Student / Classroom ratio = 30:1

a) Teacher Score

No. of Teachers	Score
2	0
1	4

b) Classroom Score (Permanent Structure)

No. of Classrooms	Score
2	0
1	2
0	4

c) Student / Teacher Score

Student/Teacher Ratio	Score
0 - 30	0
31 - 40	1
41 - 50	2
51 or more	4

d) Student / Classroom Score

Student/Classroom Ratio	Score
0 - 30	0
31 - 40	1
41 - 50	2
51 or more	4

Formula for calculating the scoring of problem:

Population Score + Travel Time Score + Quality Score
(Teacher score + classroom score + student / teacher ratio score + student / classroom ratio score) **= Total Score**

Village Access Problem Indicator: Method & Formula

Sector: Primary Health Care Facility (Sub-Centre)

Government Norm:

- One Sub-Centre for every 5,000 population in plain area, and 3,000 population in hilly area to cater the health care needs of a / cluster of villages
- With the present population density in Orissa of 236 persons/km², one Sub-Centre has to cover an area of about 21 km². On the assumption that every covered area is a square and the Sub-Centre is located in the middle point, the maximum straight distance between edge and the centre point would be about 3.25 kms. This means a walking distance of average one hour for a single trip.

1. Population Score

Population	Score
0 - 175	1
176 - 350	2
351 - 525	3
526 or more	4

2. Distance / Travel Time Score

Travel Time (Hour per single trip)	Score
0 - 1	0
1 - 2	2
2 or more	4

3. Staff Score

Govt. Norm: Every Sub-Centre should be manned with atleast 2 health workers (one male and one female)

No. of Workers	Score
2	0
1	4

Formula:

"Population Score + Travel Time Score + Staff Score = Total Score"

Village Access Problem Indicator: Method & Formula

Sector: Primary Health Centre

Government Norm:

- A primary health centre is provided to a population of 30,000 in plain area and 20,000 in hilly area.
- With the population density in Orissa of 236 persons/km², one Primary Health Centre is to cover an area of about 127 km². On the assumption that every covered area is a square and the Primary Health Centre (PHC) is located in the middle point, the maximum straight distance between the edge and centre point would be about 8 kms, which is a walking distance of about 2 hours for a single trip.

1. Population Score

Population	Score
0 - 175	1
176 - 350	2
351 - 525	3
526 or more	4

2. Distance / Travel Time Score

Travel Time (Hours per single trip)	Score
0 - 2	0
2 - 4	2
4 or more	4

Formula:

"Population Score + Travel Time Score = Total Score"

Village Access Problem Indicator: Method & Formula

Sector: Community Health Centre (CHC)

Government Norm:

- A CHC is provided for a population of 80,000 to 1, 20,000 populations in rural areas.
- The Travel Time Score is based on the government norm that for every 80,000 - 1, 20,000 population one CHC should be provided. With the population diversity in Orissa of 236 persons/km², one CHC has to cover around 339 km². On the assumption that in every covered area from the edge of the square the centre point would be about 13 kms and it means a walking distance of about 4 hours.

1. Population Score

Population	Score
0 - 175	1
176 - 350	2
351 - 525	3
526 or more	4

2. Distance / Travel Time Score

Travel Time (hours per single trip)	Score
0 - 4	0
4 - 8	2
8 or more	4

3. Quality Score

The government norms are:

- Atleast a laboratory
- Atleast a X-ray
- Atleast 30 beds

(a) Laboratory Score

Laboratory	Score
1	0
0	4

(b) X-Ray Score

X-Ray	Score
1	0
0	4

(c) Beds Score

No. of Beds	Score
30 or more	0
21 - 30	1
11 - 20	2
10 or less	4

Formula:

The severity of the problem with regard to CHC can be calculated with the formula:

"Population Score + Travel Time Score + Quality Score
(Laboratory Score + X-Ray Score + Beds Score)"

Village Access Problem Indicator: Method & Formula

Sector: Drinking Water

Government Norm:

- One public stand post or hand pump for every 150 population
- Atleast one source within 500 meters (10 minutes walking distance per single trip)

1. Population Score

Population	Score
0 - 150	1
151 - 300	2
301 - 450	3
451 or more	4

2. Distance / Travel Time Score

Travel Time (Minutes per single trip)	Score
0 - 10	0
11 - 20	1
21 - 30	2
31 or more	4

3. Quality Score

Atleast one source for every 150 population and additional one source for every additional 150 population

Population / Tube well Score

Population / Tube well	Score
0 - 150	1
151 - 300	2
301 or more	3
No Source	4

Formula:

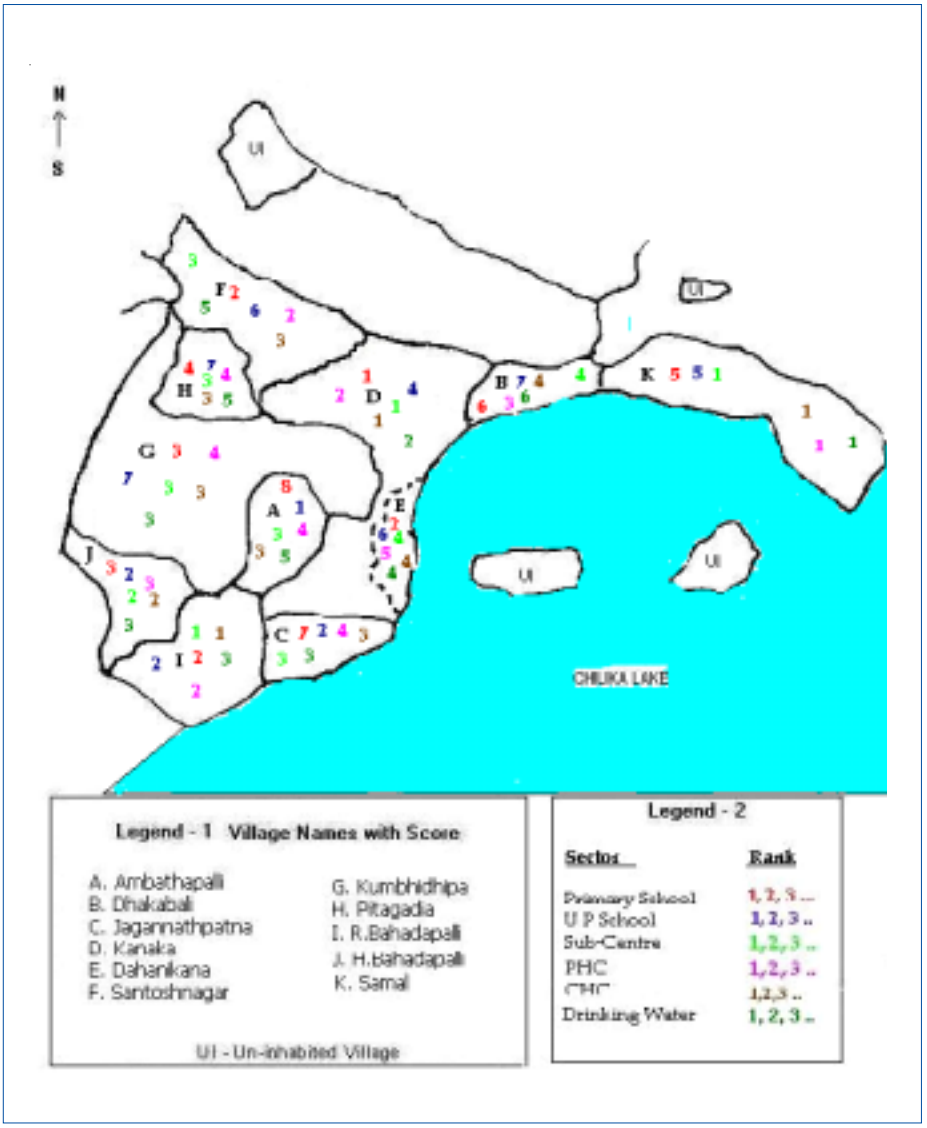
"Population Score + Travel Time Score + Household/Tube well Score = Total Score"

Annex 5

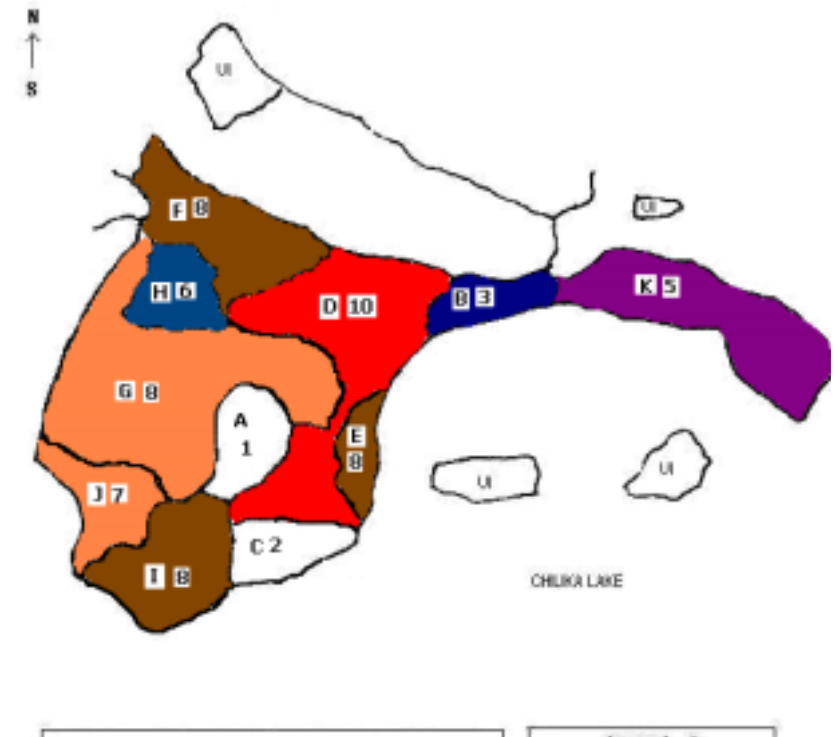
Combined Problem Map

Annex 5: Combined Problem Map

Kanaka Gram Panchayat
Combined Access Problem Map



Kanaka Gram Panchayat
Access Problem Map – Primary School
(1st to 5th Standard)



Legend - 1 Village Names with Score

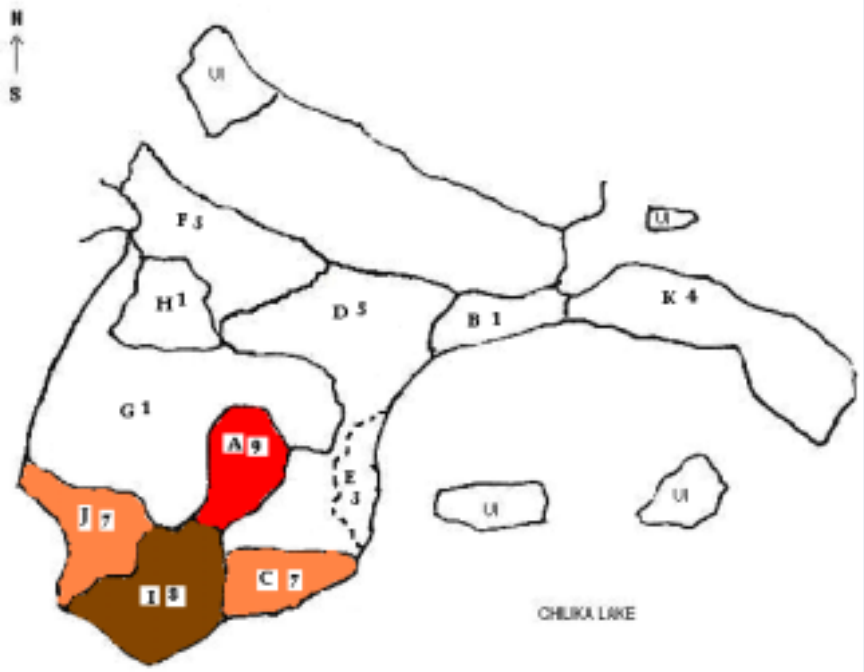
A. Ambathapalli	(1)	G. Kumbhidhipa	(8)
B. Dhakabali	(3)	H. Pitagadia	(6)
C. Jagannathpatna	(2)	I. R.Bahadapalli	(8)
D. Kanaka	(10)	J. H.Bahadapalli	(7)
E. Dahanikana	(8)	K. Samal	(5)
F. Santoshnagar	(8)		

UI - Un-inhabited Village

Legend - 2

Problem Rank	Colour
Rank 1	
Rank 2	
Rank 3	
Rank 4	
Rank 5	
Rank 6	
No Problem	No Colour

Kanaka Gram Panchayat
Access Problem Map – Upper Primary School
(6th & 7th Standard)



Legend - 1 Village Names with Score

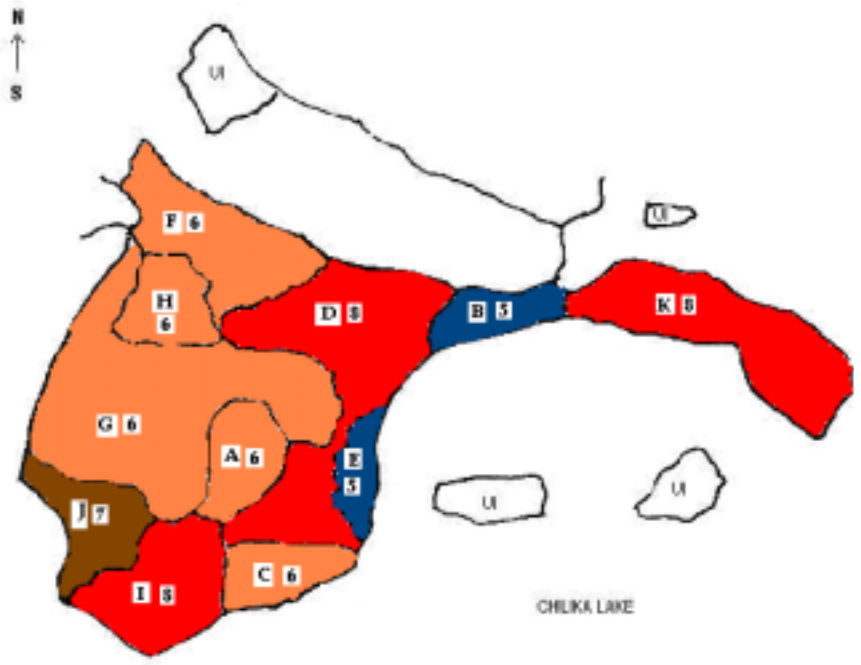
A. Ambathapali	(9)	G. Kumbhidhipa	(1)
B. Dhakabali	(1)	H. Pitagadia	(1)
C. Jagannathpatna	(7)	I. R.Bahadapali	(9)
D. Kanaka	(5)	J. H.Bahadapali	(7)
E. Dahanikana	(3)	K. Samal	(4)
F. Santoshnagar	(3)		

UI - Un-inhabited Village

Legend - 2

Problem Rank	Colour
Rank - 1	
Rank - 2	
Rank - 3	
No Problem	No Colour

Kanaka Gram Panchayat
Access Problem Map – Primary Health Care (Sub-Centre)



Legend - 1 Village Names with Score

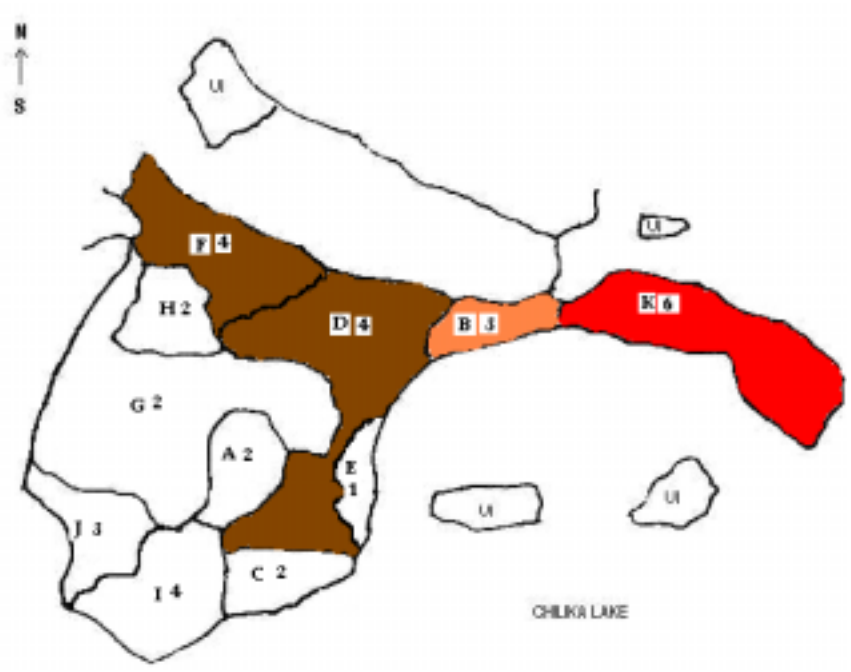
A. Ambathapalli	(6)	G. Kumbhidhipa	(6)
B. Dhakabali	(5)	H. Pitagada	(6)
C. Jagannathpatna	(6)	I. R.Bahadapalli	(8)
D. Kanaka	(8)	J. H.Bahadapalli	(7)
E. Dahanikana	(5)	K. Samal	(8)
F. Santoshnagar	(6)		

UI - Un-inhabited Village

Legend - 2

Problem Rank	Colour
Rank - 1	
Rank - 2	
Rank - 3	
Rank - 4	
Rank - 5	
Rank - 6	
No Problem	No Colour

Kanaka Gram Panchayat
Access Problem Map – Primary Health Centre (PHC)



Legend - 1 Village Names with Score

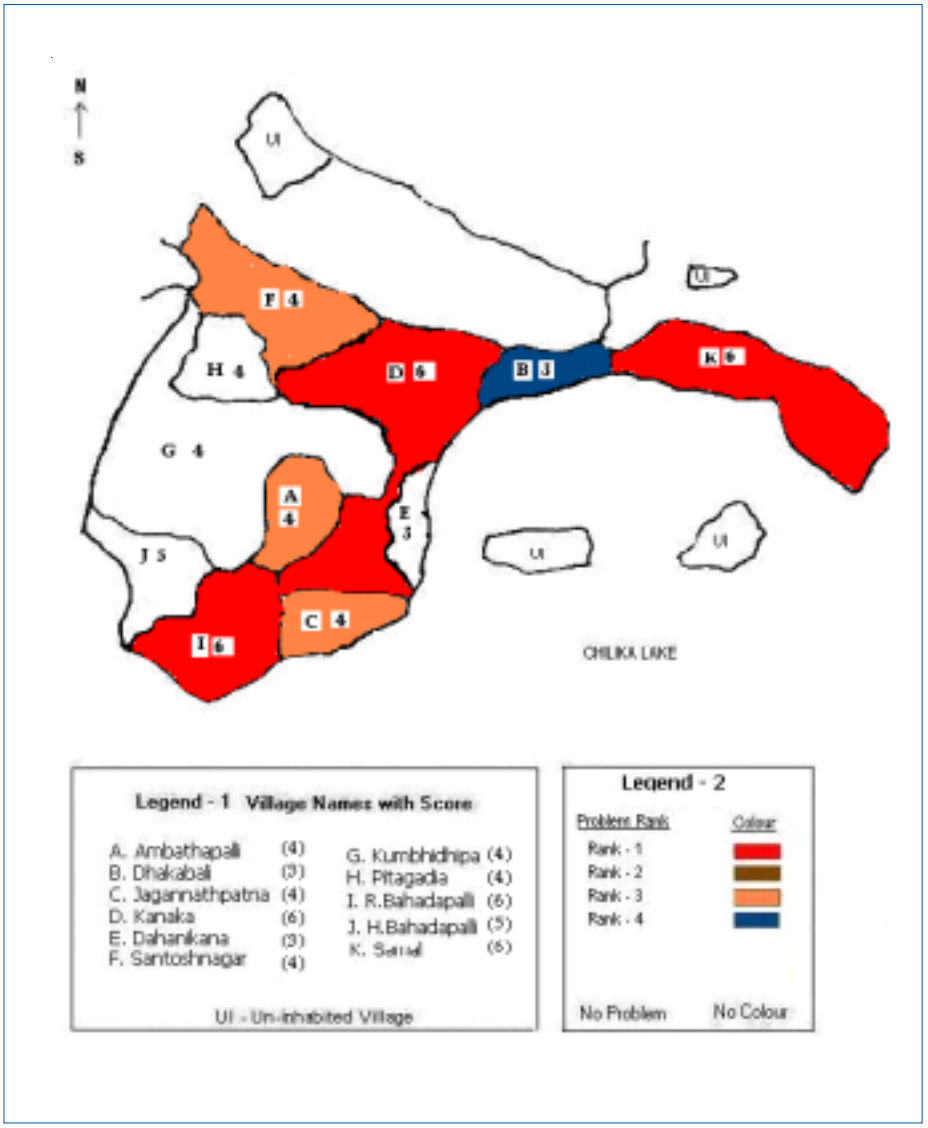
A. Ambathapali	(2)	G. Kumbhidhipa	(2)
B. Dhakabali	(3)	H. Pitagadia	(2)
C. Jagannathpatna	(2)	I. R.Bahadapali	(4)
D. Kanaka	(4)	J. H.Bahadapali	(3)
E. Dahanikana	(1)	K. Samal	(6)
F. Santoshnagar	(4)		

UI - Un-inhabited Village

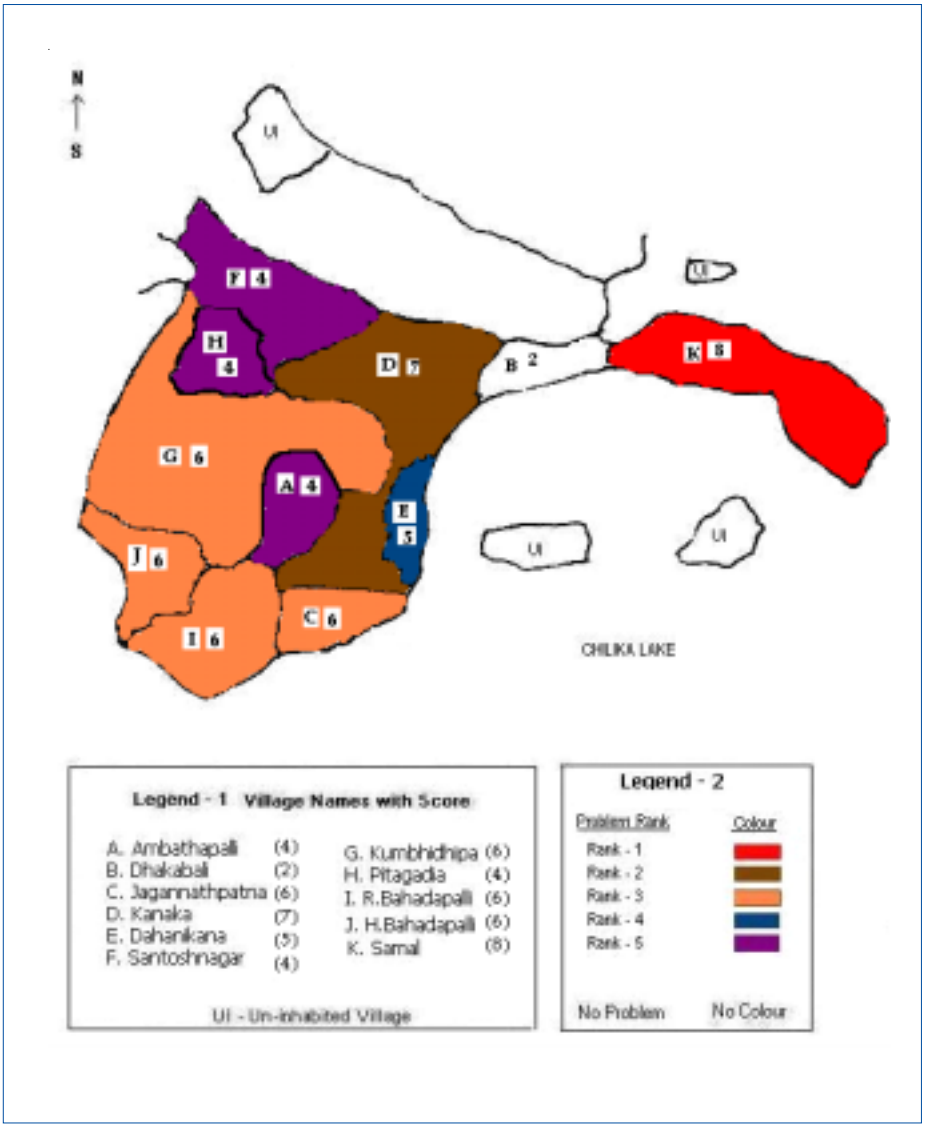
Legend - 2

Problem Rank	Colour
Rank - 1	
Rank - 2	
Rank - 3	
Rank - 4	
Rank - 5	
Rank - 6	
No Problem	No Colour

Kanaka Gram Panchayat
Access Problem Map – Community Health Centre (CHC)



Kanaka Gram Panchayat
Access Problem Map – Drinking Water



Annex 6

Project Formulation Worksheets

Project Formulation Form

Project description: Construction of Building for new Primary School

Location of Project: R.Sialipata

Estimated Costs: Rs. 3,71,000

Benefiting villages: R.Sialipata

Kind and amount of effects per benefiting village:

Village Name	Population	Water	Health	Education	Total Effects Village Population	Total Effects*
R.Sialipata	287	-	-	3	3	861
Total	**287**	**-**	**-**	**3**	**3**	**Total 861**

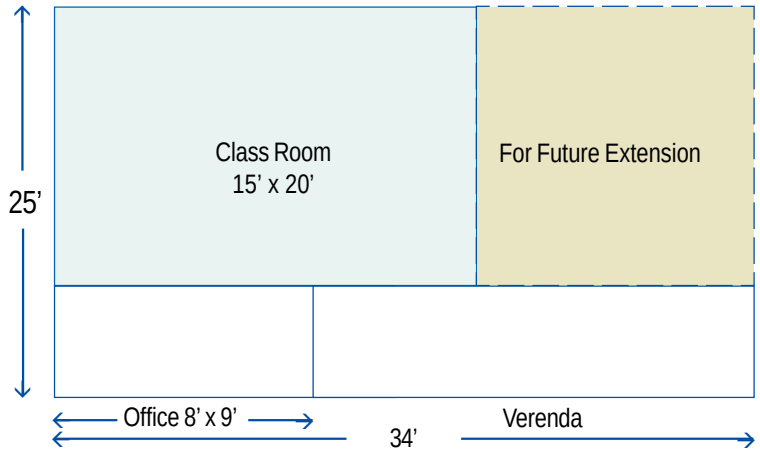
Cost/Ó$_i$ (Total Effects$_{village}$ * Poplation$_{village}$)

Lead times for:

Resource mobilisation	Design	Preparation	Implementation
Construction:	1 month	2 months	6 months
Operations			
Plan Year	January 2005	February – March 05	April – March 05

Finance Source: Mass Education Dept. & DRDA, Ganjam

Sketch Design

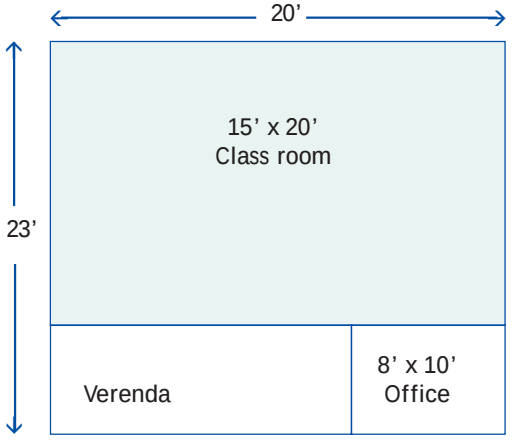


Built Area

Ground Floor	=	572 Sq. ft.
First Floor	=	572 Sq. ft.
Total	**=**	**1144 Sq. ft.**

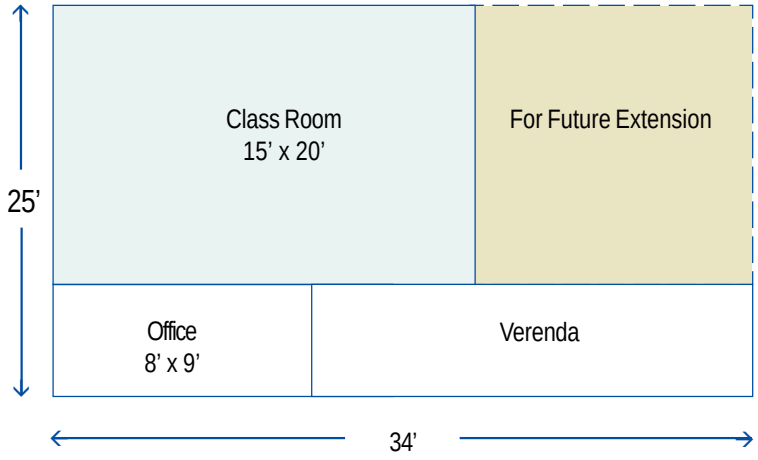
Standard Design

EGS Centre Building



Built Area : 23' x 20' = 460 Sqft.

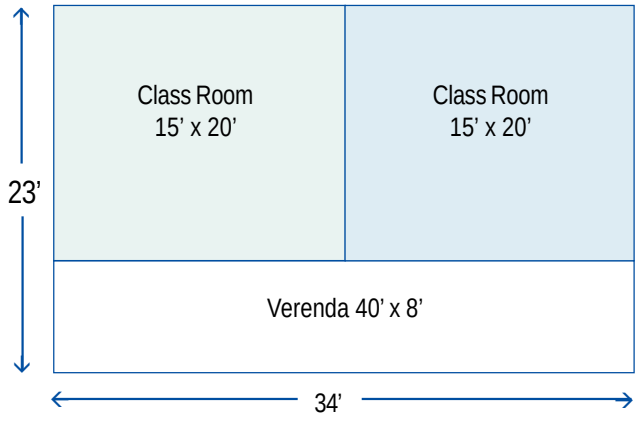
New Primary School Building



Built Area

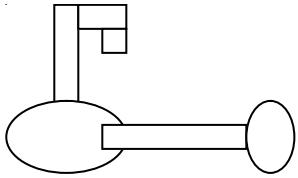
Ground Floor	=	572 Sq. ft.
First Floor	=	572 Sq. ft.
Total	**=**	**1144 Sq. ft.**

Additional School Building



Built Area: 920 Sq. ft.

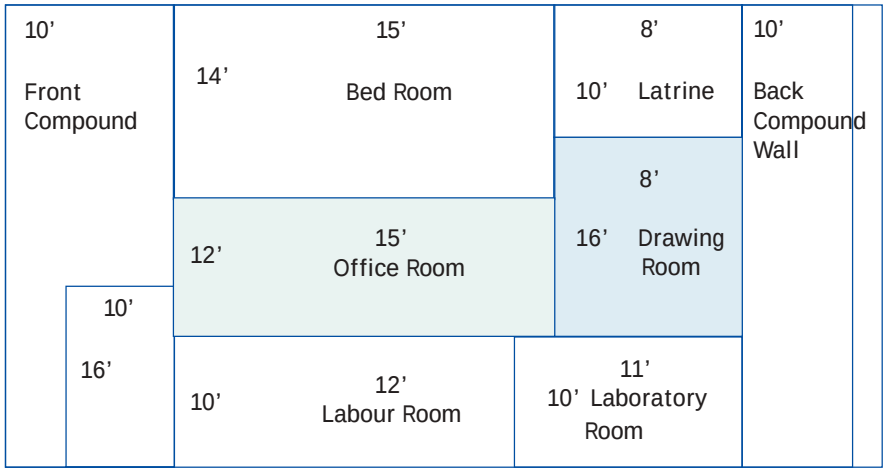
Tube Well



Total Depth = 60 mtr.

Soak Pit & Platform

Health Sub Centre



Bed Room	– 15' x 14'	= 210 Sq. ft.
Toilet	- 10' x 8'	= 80 Sq. ft.
Office Room	– 15' x 12'	= 180 Sq. ft.
Drawing Room	– 16' x 8'	= 128 Sq. ft.
Labour Room	– 12' x 10'	= 120 Sq. ft.
Laboratory Room	– 11' x 10'	= 110 Sq. ft.
Verenda	- 16' x 10'	= 160 Sq. ft.
	Total	**= 988 Sq. ft.**
Bed Room	– 15' x 14'	= 210 Sq. ft.
Toilet	- 10' x 8'	= 80 Sq. ft.
Office Room	– 15'x12'	= 180 Sq. ft.
Drawing Room	– 16' x 8'	= 128 Sq. ft.
Labour Room	– 12' x 10'	= 120 Sq. ft.
Laboratory Room	– 11' x 10'	= 110 Sq. ft.
Verenda	- 16' x 10'	= 160 Sq. ft.
	Total	**= 988 Sq. ft.**

Standard Estimate

Tips for Project Cost Estimation

- Reference - worksheet 5
- Standard designs and estimate for road construction, installation of tube well, piped water supply, construction of school building and health sub-centre building.
- For estimating road maintenance project attached maintenance plan to be referred.

A. Broad Estimate for Construction of Rural Roads

Sl.	Description	Rate / Km
1	Compacted Earth Work	Rs. 1,00,000
2	Moorum Sub-base (9" thick Moorum Compacted to 6" thick) (Collection, spreading & compaction)	Rs. 1,00,000
3	1st Coat Metal (Gr-I Hard granite metals) (4" thick Gr-I Metals 40mm to 90 mm sizes) (Collection, spreading & compaction)	Rs. 1,25,000
4	2nd Coat Metal (Gr-II Metals) 3" thick hard granites Gr-II metals (40 mm to 63 mm size)	Rs. 1,75,000
5	Surface dressing ½ thick 12 mm size (Collection, spreading & compaction)	Rs. 1,25,000
6	Seal Coating	Rs. 75,000
7	Premix Carpet with Seal Coat	Rs. 2,50,000
8	Sub-Merssible bridge	Rs. 1,00,000/Meter
9	Box-Cell	Rs. 80,000/Meter
10	1.25 Meter Diameter Hume Pipe Culvert (single row)	Rs. 40,000/Meter
11	1.25 Meter Diameter Hume Pipe Culvert (Double rows)	Rs. 60,000/Meter

B. Broad Estimate for Installation of tube well

Specifications:

1	Total depth of tube well (125mm x 100mm dia)	-	60.00 meter
2	Minimum curing (PVC 125mm) as per …. Condition	-	30.00 meter
3	Cleaning & developing	-	1no
4	Construction of Soakpit	-	1number
5	Construction of platform	-	1number
6	Hand pump	-	1set
7	Riser pipe	-	80 feet

Standard Estimate

1.	Minimum depth of Tube Well (60.00 m)	-	Rs. 16,000
2.	Casing PVC/GI 125mm dia pipe (30.00m) (provided as per site condition)	-	Rs. 14,515
3.	Cleaning and developing (1hour)	-	Rs. 200
4.	IM-III H.P. with CI cylinder & 8nos. BSC Rod (1 set)	-	Rs. 4,755
5.	65mm dia GI riser pipe (8pc @ 660)	-	Rs. 4,880
6.	Construction of soakpit (1no)	-	Rs. 2,500
7.	Construction of platform	-	Rs. 2,150
	Total		**Rs. 45,000**

C. Broad Estimate for Piped Water Supply (100 metres)

1.	For source – sinking of larger dia production well 200 mm (8") dia x minimum depth 100m with 200mm dia PVC casing/slotted pipe	-	Rs. 1,20,000
2.	Construction of 3.0m x 3.0m pump chamber (1no)	-	Rs. 40,000
3.	Procurement of 110mm dia rising main pipe (PVC) Including excavation of pipe line trench joining, refilling etc. for 100mtr length @Rs. 188.70/mtr	-	Rs. 18,870
4.	Cost of fittings and fitting charge (10% of item)	-	Rs. 1,877
5.	Construction of SV/NRV/AV chamber (3nos. @ 3000 each)	-	Rs. 9,000
6.	Construction of stand post for public (2nos. @ 2000 each)	-	Rs. 4,000
7.	Cost of SV,NRV,AV (3nos @ 2000 each)	-	Rs. 6,000
8.	Providing piping arrangements to pump & motor – LS	-	Rs. 20,000
9.	Ext. Electrification – LS (3plage with substation)	-	Rs. 1,00,000
10.	Internal electrification to P/C – LS	-	Rs. 15,000
11.	Cost of pump & motor	-	Rs. 20,000
	Total:		**Rs. 3,54,757**

D. Broad Estimate for School Building

Ground Floor

Plinth Area:	Ground floor	(15 x 20)	-	300 sft.
		(34 x 8)	-	272 sft.
				572 sft.
	First Floor	(15 x 20)	-	300 sft.
		(34 x 8)	-	272 sft.
				572 sft.
	Total (572 + 572)		**=**	**1144sft.**

1. Foundation		-	Rs. 57,200
2. Super structure		-	Rs. 85,800
3. RCC Slab		-	Rs. 42,900
4. Finishing		-	Rs. 1,00,100
	Sub-total		**Rs. 2,86,000**
5. Electric & PH		-	Rs. 42,000
6. Tube Well		-	Rs. 43,000
	Total		**Rs. 3,71,000**

E. Broad Estimate for Health Sub-Centre Building

Building Area

1. Bed Room (14'.0 x 15'.0)	-	210 sft.
2. Latrine (10'.0 x 8'.0)	-	80 sft.
3. Labour Room (3x10'.0 x 12'.0)	-	360 sft.
4. Office (12'.0 x 15'.0)	-	180 sft.
5. Dressing (12'.0 x 10'.0)	-	120 sft.
6. Verenda (20'.0 x 10'.0)	-	200 sft.
Total		**1150 sft.**

Building Cost @500/sft. x 1150sft.	-	Rs. 5,75,000
Electricity 10%	-	Rs. 57,500
PH (water supply)10%	-	Rs. 57,500
Sanitary work 10%	-	Rs. 57,500
Compound wall 300sft. x @100/sft.	-	Rs. 30,000
Total		**Rs. 7,77,500**

Foundation 20%	-	Rs, 1,15,000
Super structure 30%	-	Rs. 1,72,500
Slab 15%	-	Rs. 86,250
Finishing 35%	-	Rs. 2,01,425
Electricity	-	Rs. 57,500
Water supply (PH)	-	Rs. 57,500
Sanitation	-	Rs. 57,500
Compound wall	-	Rs. 30,000
Total		**Rs. 7,77,500**
Rounded up		**Rs. 7,80,000**

Bed Room	(15'.0 x 14'.0)	-	210 sft.
Toilet	(10'.0 x 8'.0)	-	80 sft.
Office Room	(15'.0 x 12'.0)	-	180 sft.
Drawing Room	(16'.0 x 8'.0)	-	128 sft.
Labour Room	(12'.0 x 10'.0)	-	120 sft.
Laboratory Room	(11'.0 x 10'.0)	-	110 sft.
Verenda	(16'.0 x 10'.0)	-	160 sft.
Total			**988 sft.**

Annex 7

Identifying Infrastructure Priorities for Local Economic Development

Annex 7: Identifying Infrastructure Priorities for Local Economic Development

Rural Infrastructure for Local Economic Development

Integrated Rural Accessibility Planning (IRAP) is concerned with improving access in rural areas. IRAP comprises a set of planning tools for use at Gram Panchayat level to identify and prioritize interventions to improve accessibility. The process responds to the access needs of rural people and interventions either improve mobility (roads, tracks, bridges, transport services) or bring the services and goods closer to the people (markets, schools, health centers, water supplies).

ILO ASIST AP has been collaborating with various partners in the State of Orissa in implementing a demonstration project to demonstrate and develop IRAP planning procedures for use in Orissa. The planning tools that emanated from this demonstration project enable Gram Panchayats to better identify rural infrastructure investment priorities that have a larger impact on poverty reduction.

The IRAP process initially concentrated on the basic and social needs of rural communities. Procedures were developed to identify infrastructure priorities primarily in the education, health, water and transport sectors. Access to local economic opportunities for local economic development was not adequately addressed in the initial planning tool. It was agreed that this bias risked making the planning tool incomplete for area-based rural infrastructure planning.

A second round of implementation was initiated to better integrate rural access and infrastructure needs related to local economic development activities of rural communities. The main output of this second demonstration project was a set of additional planning tools to be used in the IRAP process to identify infrastructure priorities for enhancing local economic development. The tools will be integrated in the final IRAP process and will be used during the T1, T2 and T3 Workshops described in this Guideline.

T-1 Activities

The data, maps and local knowledge will be combined in a first workshop (referred to as T-1 – see chapter 3) to identify the main economic activities providing employment and income to the rural communities. The output is a ranking of so-called local economic development sectors.

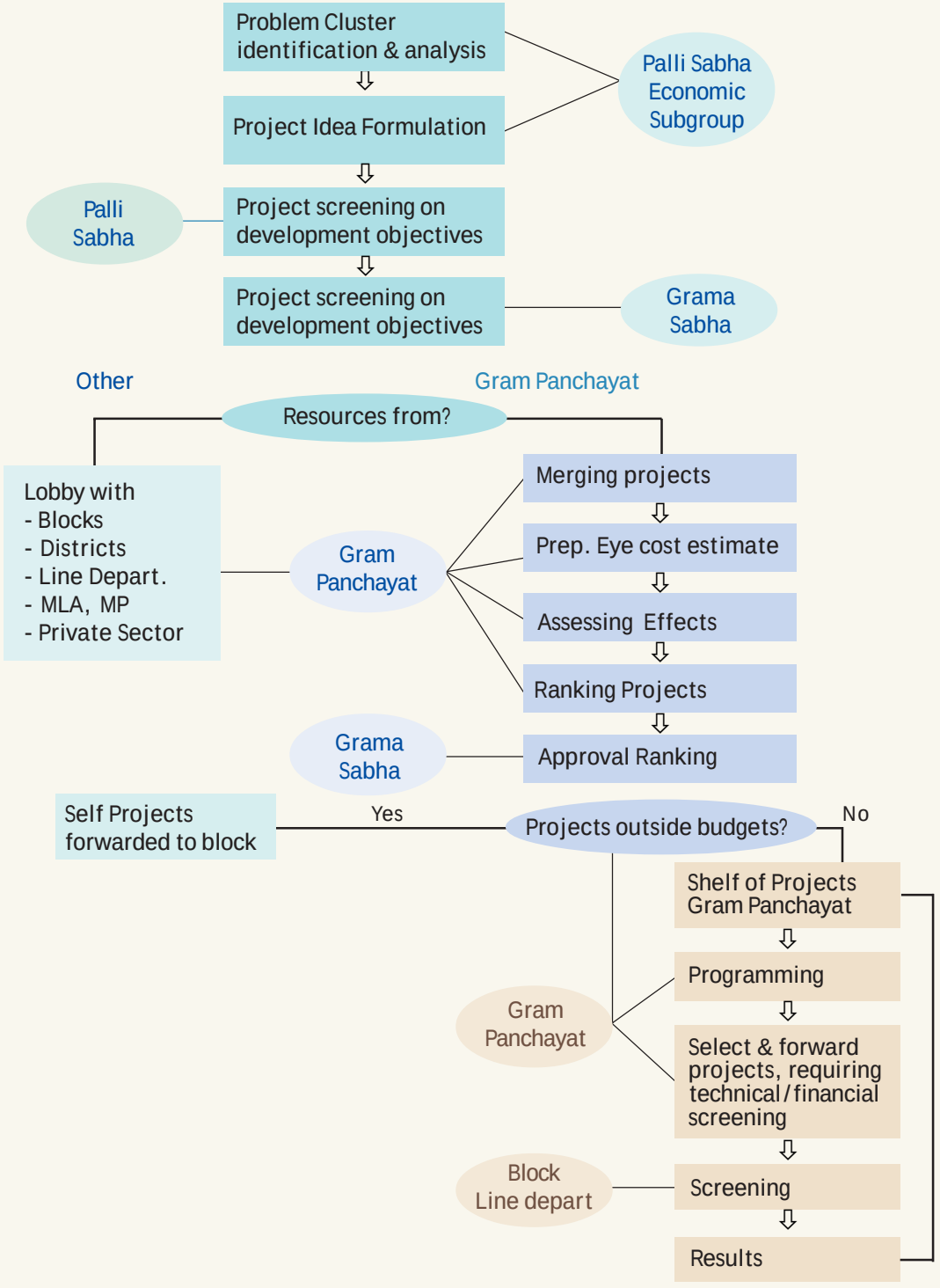
T-2 Activities

During a second workshop (referred to as T-2 – see chapter 4) village representatives will identify major rural infrastructure constraints impacting on the performance of the different local economic sub-sectors identified in the T-1 workshop.

T-3 Activities

In the final workshop (referred to as T-3 – see chapter 5) Gram Panchayat representatives will be trained to work with the villages to develop outlines for project proposals for interventions to support local economic development. People trained will thereupon implement the activities outlined below:

Process flow (T3 Activities)



ASIST AP is a regional programme of the Employment Intensive Investments Programme (EIIP) of the ILO, concerned with developing and mainstreaming poverty alleviation strategies through sustainable infrastructure development. The programme is implemented through four major fields of operation, viz: accessibility planning, labour-based works technology, small-scale contracting and infrastructure maintenance, thus providing a comprehensive approach to infrastructure development covering all stages from planning and construction to maintenance and operation.

Based in Bangkok, ASIST AP provides a full range of expert support to all stages of the project cycle from formulation, implementation, monitoring to final review and evaluation. These services include activities such as:

- planning, policy development and design of infrastructure programmes,
- influencing public investments in infrastructure towards the greater use of local resources,
- technical and managerial support to project implementation,
- information services,
- preparation of planning and implementation guidelines,
- developing appropriate methods for increased involvement of the domestic construction industry in infrastructure works,
- design and conduct of tailor-made training programmes, and
- design of appropriate maintenance management systems.

This document forms part of a range of publications from ASIST AP, in its efforts to develop and disseminate general and country specific guidelines, best practices and lessons learned in the context of planning and implementing rural infrastructure works programmes.

More information about ASIST AP can be found at **www.iloasist.org** or by contacting us at

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