# Analysis Concept and Methodology for Market Selection for IDE India Projects

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## Analysis Concept and Methodology for Market Selection for IDE India Projects

## **1.0 Introduction**

This report presents a methodology for selecting those marketsheds in which IDE India should focus their poverty alleviation projects and interventions. The approach presented has as its objective *the selection of those marketsheds where there is the greatest opportunity for IDE's interventions to have the greatest chance for success*. In this context, "success of IDE's interventions" means that the beneficiary farmer households will have their annual incomes increased, on average, by 50%. In particular, for a household at the poverty line determined by the Government of India (Rs 18,000), the desired increase in their annual income is toRs 27,000. Therefore, the overall objective of the marketshed selection process will be *to select those markets and marketsheds for which the greatest number of low income farmer households are projected to have the greatest (average) increase in annual income.* 

The market selection process will require extensive data collection from multiple sources with subsequent extraction, analyses, and processing of key data, and, finally, the selection of the "best" markets for IDE projects. Because the data requirements are both diverse and significant, and the sources for some of these data are not currently identified, the plan to accomplish this methodology also explicitly considers identification of sources of the needed data.

In order to properly implement and test the proposed methodology, it will be necessary to limit the scale of the set of markets initially considered so that the focus of the work can be on implementing and testing the validity of the conceptual approach rather than on the data collection, analysis, organization, and manipulation. Therefore, to bound the scope of this study, this Analysis Plan will be limited to selection of markets and marketsheds in Orissa state only. The methodology presented here can easily be replicated in other areas (of India and elsewhere) if it proves to be successful in Orissa.

### 2.0 Methodology Concept

The proposed methodology uses a three-step approach to go from identification and definition of all possible suitably sized markets and their marketsheds (Step 1), to elimination of those markets in which IDE interventions could not succeed for whatever reason (Step 2), and finally to the selection of the best markets from those still remaining in the list (Step 3). Each of these steps is discussed in the following subsections.

## 2.1 Step 1: Identification and Definition of Potential Markets and Marketsheds

The markets to be considered in this discussion are limited to "Block level" markets; these are one level above the village level "haat" markets, and they exist roughly at the Block level (i.e., one market per Block). Unless otherwise specified, in this document the term "Market" with a capital "M" will refer to these markets *only*. Each of these Markets has several village level (haat) feeder markets that are linked to it by some level of trade. Therefore, the "*marketshed*" for these Markets consists of all linked haats and the farmers that use them.

The list of Markets to be initially included for selection will then be all of "Block level" Markets in Orissa, as identified by reference to Orissa state statistical summaries and market analyses. The exception to this is that Markets in Districts or Blocks or other areas determined *a priori* to be unsuitable for IDE India interventions will be excluded at the outset of this work. These statistics and summaries for each district are contained in several distinct datasets and documents. As of October 2002 many of these sources need to be identified and their contents fully assessed.

A significant and demanding task will be to delineate the marketsheds for each of these Markets by identifying those villages and smaller markets that are linked to them and providing basic demographic and socioeconomic statistics for the populations and markets in those villages. The result of this analysis should be a decomposition of all areas in which IDE India may work into marketsheds. In effect, every GP and village should be "attached" to the particular Market that serves that area. This will be done by review of existing datasets (such as the *Handbook of Statistics on Indian Economy* prepared by the Reserve Bank of India, the MICA dataset, etc), manual analyses of maps showing Market locations and infrastructure such as roads and rail lines, and, possibly, via automated analyses using Geographical Information Systems (GIS). Some of these analyses may be need to be supported and/or validated by fieldwork in select areas of Orissa.

# 2.2 Step 2: Elimination of Ineligible Markets

Because the overall objective of the Market selection process is to identify those Markets within Orissa state where IDE India's water and market oriented interventions have the greatest chance of success (and where IDE India should therefore implement them), any of the identified Markets in which these interventions are precluded from success or in which the expected level of success is low will be eliminated from any further consideration.

The reasons that the interventions will be considered to be inapplicable and for which Markets will be dropped from consideration may be due to any of several factors. First, any Markets located in particular areas or regions of Orissa that IDE India has determined are not preferred for their interventions will be immediately dropped. In addition, any Market whose characteristics preclude high levels of success (such as physical and/or agro ecological environment of the marketshed not being conducive to the interventions, or demographic and/or socioeconomic characteristics of the marketshed population that fall outside the range of the desired beneficiaries) will be dropped. Specific criteria for dropping Markets are given below.

## 2.2.1 Location in "Unacceptable" Areas

As stated above, IDE may have determined that some districts or blocks or irregular areas have physical, socio-economic, or other characteristics that have been determined to be detrimental to the success of typical IDE India water and market oriented interventions. Where such conditions are considered by IDE to apply to the whole districts or blocks, then any Markets within those areas will be deleted from any further consideration. For these areas no marketshed definition or identification will be required.

## 2.2.2 Market Limitations

In some cases the characteristics of the Markets themselves may *a priori* limit the success of IDE's interventions. These limiting characteristics may include:

- Insufficient (or no) linkages to bigger markets
- Inadequate infrastructure linking feeder haats to market
- No feeder haats
- Insufficient Market sector for agriculture (focus on non-agriculture goods, services)
- Too small a number of farming households in the marketshed

# 2.2.3 Physical Environment Constraints

Some Markets may be located in specific, localized areas (smaller than whole districts or blocks) where the marketsheds are not physically conducive to success of IDE India's

interventions. Such limiting physical environmental factors may be due to water scarcity/costs or a poor environment for the most desirable high value crops. Specific reasons include the following:

- IDE water technology not feasible due to difficult or no water access
- Well costs too high to be affordable
- Poor physical environment for high value crops due to soils or temperature

# **2.2.4 Population Characteristics**

In some cases, the populations of all or part of the marketsheds may not include many farmers who have the behavior patterns or characteristics that IDE India has determined (in a separate analysis) to have acceptably high success rates with IDE interventions. This separate analysis will determine the factors that differentiate highly successful levels from marginally successful (or unsuccessful) farmers that are beneficiaries of IDE interventions. Some demographic and/or socioeconomic factors that may be associated with very low success rates include:

- Average household income in the maarketshed is too low or too high
- Low household literacy rates
- Average landholding size too small or too big
- Primary livelihoods based on non-agriculture (e.g., mining, manufacturing, etc)
- Primary marketshed population ethnic group is one that does not accept IDE type interventions

## 2.3 Step 3: Selection of "Preferred" Markets

Once the "ineligible" Markets have been determined and eliminated, some number of Markets scattered throughout Orissa will remain. These Markets and their associated marketsheds will need to be compared to one another and ranked in terms of the estimated likelihood of success of the IDE interventions. In this sense, the purpose of this step will be to pick the "low hanging fruit," i.e., the Markets and areas in which success is most likely.

This will require development of a "metric," that is, some "yardstick" that can be used to measure, compare, and rank the "success potential" of each Market/marketshed. A candidate method for doing this is discussed in Section 3.8; for now it suffices to say that the most likely metric will be a linear weighted sum of values of the relevant parameters. The value of this metric will be calculated for each Market/marketshed, making comparison of the Markets possible by comparison of the calculated values of the metric.

The Market/marketshed parameters that will be included in this metric will all be weighted to indicate their relative importance. While some of the following parameters may not be available without too much effort for their acquisition to be cost-effective, the parameters to be considered will ideally include for each Market/marketshed:

- Number of high value crops environmentally possible
- Number of high value crops possible but not grown
- Number of (all) crops currently grown in marketshed
- Percentage of environmentally possible high value crops currently sold in the Market
- Size of the manufacturing base capable of producing irrigation components that is linked to the Market
- Number of manufacturers capable of producing irrigation equipment that have plants located in the marketshed
- Number of distributors of manufactured goods in the marketshed

- Size of the agricultural input production base linked to the Market
- Number of wholesale/retail points of sale for technology and inputs
- Total populations within 50 km of the Market
- Total population size within 3 hours transport time of the Market
- Total populations within Rs 2 cost to travel to and from the Market
- Total populations linked to the Market by surfaced roads
- Agricultural volume (Rs) that goes to the international agricultural export market
- Level of infrastructure links to feeder markets (time, distance, cost)
- Percentage of marketshed with surface water most/all of the year
- Average depth of water table/surface water in the marketshed
- Average cost for digging wells in the marketshed
- Percentage of marketshed that would need access to ground water at least 33% of year
- Household literacy rate (percentage of households with at least one literate member)
- Percentage of farmers that currently use pump/drip systems
- Percentage of year that surface water accessible to at least 50% of farmers
- Percentage of year that all farmers currently have access to water for irrigation
- Average distance from farmers' homes to local haats
- Average time to local haats for farmers
- Average cost (Rs) for farmers to travel to closest haat
- Average cost (Rs) for farmers to transport crops (50 kg) to closest haat
- Percentage of farmers that have "all year" access to haats
- Percentage of the Market devoted to agriculture (number of sellers, number of buyers, % of sales volume)

## 3.0 Analysis Implementation Plan

A significant number of steps need to be completed in order to implement the analysis and Market selection processes described above. Each of these steps, in the sequence in which they will need to be completed, is briefly summarized in subsections 3.1-3.9.

In each subsection below, the subject task is briefly described, the major data requirements are given, and a recommendation is made of who (IDE India staff and/or Eric Weiss) should be the primary party responsible for that specific task.

## 3.1 Identify and Define Markets and Marketsheds

The first task will be to identify, for the level of market that will be used for this analysis, all Markets within *non-excluded* areas of Orissa. Markets in Districts or Blocks that IDE has *a priori* eliminated from consideration need not be identified.

Following the identification of eligible Markets, each of these must be defined in terms of their marketshed. This may be done through reference to market data for Orissa, or by reference to maps showing the location of subject Markets and all feeder haats and by then selecting the closest Market to each village and haat. This last part may be automated with GIS systems, or it may be done manually. The output of this process will be a "decomposition" of all eligible areas into marketsheds with the identification of all appropriate haats and villages that comprise the marketsheds

**Data Requirements:** Identification and location of all markets, haats, and villages in eligible regions of Orissa

Primary Responsibility: IDE India

## 3.2 Determine and Obtain all Required Information and Data

The extensive lists of parameters on which Steps 1, 2 and 3 will be based indicate that significant amounts of diverse data from multiple sources will be required. As of this writing, it is not clear where all of these data will be acquired, or if they all can be acquired. Consequently, one of the first tasks is to identify applicable data sources and to determine which parts, if any, of the necessary data they contain. Several datasets have already been obtained, and these and other data sources, including hardcopy District level manuals must be examined.

In many cases the desired parameters may only be available at District, Block, or Village levels; in these cases the available data must be disaggregated or aggregated, as appropriate, to get suitable values for the marketshed.

**Data Requirements:** All of the parameters listed in Sections 2.2 and 2.3, **Primary Responsibility:** IDE India with some support from Eric Weiss (2 day2)

## 3.2.1 Identify Possible and Applicable Data Sources

Because the list of necessary parameters is so long and contains so many different types of data, a large number of diverse data sources will be required. These will contain some or all elements of the necessary economic, geographical, physical (environmental), socioeconomic, demographic, and agricultural data. These databases may exist in either hardcopy or softcopy (digital) form.

The immediate problem will be to determine that these databases exist and what they contain. This will require Internet searches, visits to State of Orissa government state and district level offices, visits to libraries, and contacts with other NGOs or global organizations (such as World bank) working in India. In addition, IDE India currently has a number of datasets (e.g., *Handbook of Statistics on Indian Economy* prepared by the Reserve Bank of India) and these must be examined and analyzed to determine the relevance of their contents to this work.

**Data Requirements:** Lists of known relevant information sources/databases for India, Web sites and links to data for India, Orissa state District level statistical summaries

Primary Responsibility: IDE India

## 3.2.2 Acquire Datasets from all Possible Sources

Once the relevant databases have been identified, they must be acquired or accessed. This will require ordering documents and digital datasets, or reviewing the relevant data in libraries, other NGO offices, etc. In some cases it may mean just photocopying pages from existing documents.

**Data Requirements:** Addresses and URL (web addresses) for digital sources/databases to be accessed, names of hardcopy reports required

Primary Responsibility: IDE India

# 3.2.3 Review Collected Data and Determine Data Gaps

Once all of the available data that have been previously identified as relevant (Section 3.2.1) have been obtained by IDE, the needed data must be extracted from them. This process will also lead to the identification of "data gaps," i.e., desired information that has not been contained in any of the databases and documents obtained by IDE. The output of this step should be a listing of the parameters that have been obtained and their level, e.g., State, District, Block, Village, etc.

This will also allow determination of the processes that will be necessary to convert all parameters to "Market level" data, i.e., single values of these variables that represent the entire Market/marketshed. As noted earlier, this may require data disaggregation or aggregation from the original sets of values to Market level values. Which process is required will depend on the original level of the data; those parameters that originally exist at a *higher* level than "Market," i.e., State, District, and (sometimes) Block will be *disaggregated* to "Market" level, while those parameters that exist at a level *lower* than "Market," i.e., Village, Hamlet, etc will need to have these lower level values *aggregated* up to "Market" level. Any variables that are obtained originally at "Market" level will of course be retained at that level.

**Data Requirements:** All collected data **Primary Responsibility:** IDE India with review by Eric Weiss (1 day)

## 3.2.4 Revise Analysis Plan

The analysis plan described earlier in this report makes use of all of the identified parameters to either eliminate ineligible Markets or to rank those remaining Markets according to some metric. Consequently, if some of the desired data are not available, there may be some impacts on the ability to carry out these steps in a satisfactory manner.

Therefore, once the unavoidable data gaps are identified (Section 3.2.3) the Analysis Plan must be reviewed to ensure that the necessary steps and decisions can still be made with the data that are available. In some cases, substitution of available parameters for some missing one(s) may be possible; in other cases, decisions on eliminating or ranking Markets may need to be made with less information. In extreme cases, the analysis plan may need to be revised to accommodate these data gaps. In any case though, these data shortfalls need to be identified, documented, and somehow dealt with in the subsequent tasks.

**Data Requirements:** No new requirements **Primary Responsibility:** IDE India with support from Eric Weiss (1-2 days)

### 3.2.5 Create IDE India Market/Marketshed Database

Once all of the various data have been obtained, these need to be combined into the IDE India Market Database for Orissa. This database may be developed as a relational database using some stool such as Microsoft Access, or it may be more simply configured as one or more spreadsheets using a tool such as Microsoft Excel.

Before creating the actual database, those parameters that were not originally at "Market" level will need to be converted to this level. If a relational database has been used, then different tables can contain the different levels of data corresponding to the different geographic areas. In this case, each such table would link the data to the Market to which it applies. The conversion of data levels could be accomplished and the data at the original levels would also be retained. The level conversion will be a straightforward process in which all data levels lower than "Market" will be aggregated and weighted (by population or area, as appropriate, to derive a "Market" level value. Higher-level data (i.e., data defined for levels that include multiple Markets) will simply assign the higher-level data values to all Markets wholly within that area for which the original value is defined. Where a Market straddles more than one of these areas, a weighted sum will again be used to derive the "Market" level values. The output of this task will be the IDE India Market Database (Orissa)

**Data Requirements:** All data previously obtained **Primary Responsibility:** IDE India with support from Eric Weiss (1-5 days)

## 3.3 Determine Ineligible Markets

Once the database has been created, it is a simple matter to eliminate all Markets that fail to meet minimum cutoff criteria as laid out in Section 2.2. What is not so simple is to determine the suitable cutoff levels for the different criteria. Recall that these criteria should reflect Market/marketshed conditions or factors that preclude or seriously diminish the chances for success of IDE India interventions.

Determining what levels of the various criteria correspond to "diminished chances for success" will require some analyses of the results of the separate study undertaken to identify those farmer/household/economic/environmental factors that differentiate the more successful farmers from the more marginal ones. Note that "success" is here defined as the result of participating in IDE's interventions. This task assumes that the various "farmer success factors" have been identified (in the separate study) and are available for use here.

In any event, once the cutoff levels for the different criteria have been determined by whatever means, they can be applied to identify those Markets that will be considered ineligible. These Markets do not need to be deleted from the database; they only need to be marked to preclude their use in the comparisons and rankings of the eligible Markets.

**Data Requirements:** Lists of Orissa Markets, the Market database, Farmer Success study results, and criteria parameter cutoff levels **Primary Responsibility:** IDE India

## 3.4 Develop and Implement a Metric

Those markets that not have already been determined to be ineligible must now be compared in terms of their values for all of the parameters listed in Section 2.3. The different Markets will have different associated values for each of the markets. Combining these values and then comparing the results requires the proverbial adding of apples and oranges, and will be accomplished through the definition and implementation of a "metric."

A "metric," in the context of this study, is simply some method or algorithm for defining and calculating a value for each Market that reflects its overall "goodness," or, in this instance, the likelihood that farmers in its marketshed will benefit from IDE India interventions. Therefore, such a metric must somehow combine the Market-specific values or each of the comparative parameters. The process that will be used to accomplish this is described in the following paragraphs. Because this part of the analysis may be less well understood, the description provided below is more detailed than that given for other parts of this Analysis Plan.

### **3.4.1** Define the Metric

A simple approach to a metric that simultaneously considers diverse variables is to use a "weighted linear sum" of those variable values. Simply put, this means that the values of each parameter of interest are multiplied by numbers that reflects the relative importance of that parameter (the "weight"), and then these simple products are added up. The resultant sums are calculated for each Market and then compared. If the parameter values and weights are properly defined, then the Markets can be compared by reference to the resultant values; higher values will correspond to "better" Markets. The equation that defines the value of this "weighted linear sum" for any specific Market is presented below:

$$M = W_1X_1 + W_2X_2 + \dots + W_3X_3 + \dots + W_nX_n$$
 Equation 1

where "M" is the resultant sum, or value of the Market for a specific market, " $W_1$ " is the weight for parameter 1, " $W_2$ " is the weight for parameter 2, etc and  $X_1$  is the value of parameter 1 for that specific Market,  $X_2$  is the value of parameter 2 for that specific Market, and so on.

Note that all of the parameter values have to "go in the same direction." That is, all of them have to either improve when their values increase, or improve when the values decrease. While it does not matter which of these options are chosen, the same choice must be made for all parameters combined in the sum, so that increasing values of the metric are always either better (or worse) than smaller values of the metric. Accomplishing this in the face of parameters whose intrinsic values may not correspond to this scheme may require conversion of some sets of values via some form of mathematical "inversion."

**Data Requirements:** List of available parameters to be used for Market comparison **Primary Responsibility:** Eric Weiss (2 days)

## 3.4.2 Determine Parameter Weights

The values for the set of weights,  $\{W_i\}$ , must now be determined. In general, these weights will be subjectively determined, and will reflect the judgment of "experts" about the relative importance of each specific comparison towards contributing to the "success" of the farmers in that marketshed when IDE interventions are implemented.

For this study, each involved member of IDE India's staff will be asked to assign each individual parameter a weight, ranging from 1-5, reflecting their individual opinion about the relative importance (1 is least important, 5 is most important) of each parameter. The staff values for each separate parameter will be averaged, and the average values (for all parameters) will be normalized by dividing by their sum. These normalized values will be the set of weights  $\{W_i\}$  used in Equations 1 and 3.

**Data Requirements:** IDE India Market Database (Orissa), **Primary Responsibility:** IDE India with support from Eric Weiss (1 day)

## 3.4.3 Convert Parameter Values to Z-scores

A typical problem in using weighted linear sums is that the different magnitudes of the different parameter value ranges can allow some parameters to effectively "overpower" other variables and effectively suppress their importance. For example, if "Annual Income," measured in thousands of Rupees, is combined with "Depth of Ground Water," measured in tens of meters, the sheer size of the values for "Annual Income" will virtually suppress the values of "Depth of Ground Water" when the two are added. The problem can be even worse when parameter values for, say, "Time to get to Market (hours)" is combined with "Annual Income."

While it is possible to compensate for the differences in the magnitudes of the different variables by suitably adjusting the magnitudes of the weights, it is preferable to handle this problem by converting the original parameter values to their respective "Z-scores." This is done for each set of Market-specific values corresponding to each parameter to be included in the comparison. The equation used to convert a set of values  $\{X_1, X_2, X_3, \ldots, X_n\}$  to their Z-score equivalents is:

$$Z_i = (X_i - \mu) / \sigma$$
 Equation 2

where  $\mu$  is the mean (average) of the original set of variables  $\{X_i\}$  and  $\sigma$  is the standard deviation of the set of  $\{X_i\}$ . These Z-scores simply convert each original value to "the

number of "standard deviation units" away from the mean where its value is. These Z-scores have a number of nice statistical properties, but for the purposes at hand it suffices to note that virtually the entire set of Z-scores for any parameter will typically lie in the range –4 to +4, making the range of magnitudes for all sets of Z-scores equal and comparison and combination of these Z-scores for different parameters feasible. The output from this task will be a set of equivalent Z-scores for each Market for each parameter used to compare the different markets.

When the original set of  $\{X_i\}$  are converted to their Z-score equivalent,  $\{Z_i\}$ , Equation 1 becomes:

$$M = W_1Z_1 + W_2Z_2 + \dots + W_3Z_3 + \dots + W_nZ_n$$
 Equation 3

this is the form in which this metric will be implemented and its Market-specific values calculated in this study.

Data Requirements: IDE India Market Database (Orissa), including values for all weights, {W<sub>i</sub>}

Primary Responsibility: Eric Weiss (2 days) with support from IDE India

### 3.4.3 Apply Metric and Rank Markets

Once the parametric form (Equation 3) of the metric has been finalized, the value of the metric for each Market can be directly calculated using the Market database, the weights, and Equation 3. The value of the metric thus calculated is the measure of "likelihood of success" for farmers in the associated marketshed. The calculation itself can be automated and implemented within the database. Once the values of the metric for each eligible Market have been calculated, the markets can be sorted and rank-ordered according to their calculated metric value, or "likelihood of success."

Data Requirements: IDE India Market Database (Orissa), including values for all weights, {W<sub>i</sub>}, Equation 3

Primary Responsibility: Eric Weiss (0.5 days)

### 3.5 Select Preferred Markets

The selection of Markets in which the Orissa Project will be implemented simply requires selection of the top ranked Markets according to the "likelihood of success," i.e., calculated value of the metric. Depending on the number of different Markets in which the project will work, IDE India can simply select that many Markets from the ranked list.

**Data Requirements:** IDE India Market Database (Orissa), including sorted and ranked values of the metric.

**Primary Responsibility:** IDE India with support from Eric Weiss (0.5 days)

# 3.6 Review and Validate Results and Methodology

It is a common occurrence that ideas and analysis concepts that seem to be good ideas in theory sometimes produce unexpected, and unsatisfactory results. Consequently, the results of any such processes must be reviewed and validated; this review is sometimes referred to as "a reality check" and is intended to determine whether or not the results can be considered to be realistic and valid.

This review/validation process will require that IDE India staff look at the top ranked Markets and the values of the metric calculated for them to see if intuitively, the results make sense. This includes a subjective assessment of whether the Markets that are thus determined to be the preferred ones correspond to the intuitive choices that would be made by the IDE India staff who have been working in these areas and have some appreciation of these Markets and the associated issues.

Data Requirements: IDE India Market Database (Orissa), including sorted and ranked values of the metric.Primary Responsibility: IDE India

3.7 Revise Methodology as Required

It is possible that this review will suggest that the Markets with the highest calculated values of the metric do not seem to the IDE staff, based on their understanding of the areas, the Markets, and the interventions to be initiated, to be the best ones in which to work. The most likely reasons for such a finding are that the weights have not been chosen properly or that certain key parameters have been omitted from Equation 3.

In the first instance, if the review of the results suggests that some parameters have been weighted too highly (i.e., their relative importance has been exaggerated), then review and repetition of the weighting process is called for using the process described in Section 3.4.2.

If the review process leads to the conclusion that certain key parameters bearing on the suitability of the Markets have been omitted, then if the necessary data are available, these parameters should be added to Equation 3 by determining their values for each Market, converting the set of values for each parameter to Z-scores, determining their weight(s), and adding them into Equation 3 and repeating the ranking process.

Data Requirements: IDE India Market Database (Orissa), including sorted and ranked values of the metric, all parameter weights {W<sub>i</sub>}.
Primary Responsibility: IDE India

## **3.8 Document Methodology and Results**

Once IDE India is satisfied with the results, i.e., the Markets selected for IDE India's Orissa Project, then the final methodology and the results should be fully documented. This document will serve as a record of what was done, as a vehicle for informing donors of how the analysis was performed and how Markets and marketsheds were chosen. Finally, this report can form the basis for subsequent Market analyses and selections.

This report should list all of the areas and Markets in Orissa, and the processes and criteria (cutoff values) used to eliminate some Markets from consideration. In addition, the report should fully describe the IDE India Market Database (Orissa), the parameters contained in it, the weights for each parameter and the process used to determine these. The final, explicit form of Equation 3 and the values calculated for each Market/marketshed using this equation should also be documented. Finally, the Markets selected by the process should be fully identified.

Data Requirements: IDE India Market Database (Orissa), including sorted and ranked values of the metric, all parameter weights {W<sub>i</sub>}.
Primary Responsibility: IDE India with support from Eric Weiss (2-4 days)

### **3.9 Present Results to Donor(s)**

Once the results have been fully documented, they should be presented to the project donor(s) for their review and approval. This should entail a presentation, providing question and answer periods, and delivery of the analysis report. Of course, the donor(s) should be kept apprised of the progress and findings of the entire Market selection process, but once the selection is completed, a review of the entire process is warranted.

Data Requirements: IDE India Market Database (Orissa), including sorted and ranked values of the metric, all parameter weights  $\{W_i\}$ , analysis methodology report.

Primary Responsibility: IDE India

## 3.10 Revise Methodology and Results as Required

Subject to donor comments made at the presentation of the results of the market selection process to them, some revision of methods, weights, criteria, etc may be required. Because, ideally, IDE will have kept the donors fully informed of these things as the work proceeded, these changes should be minimal and easily accomplished. Upon completion of these revisions to the data or the methods, the study documentation should be updated to reflect the new changes, and this analysis can be considered to be complete. At this point the results of the Market selection process can be used as the basis for defining Market-specific interventions and beginning the real work of the Orissa Project.

**Data Requirements:** Donor comments, requests for revisions **Primary Responsibility:** IDE India

## 4.0 Analysis Schedule

The tentative schedule within which the market selection analysis will be performed is shown in Figure 1; note that because this schedule is entirely sequential, any delay in one task will push the completion of the following tasks back by a similar amount of time. This schedule may need revision as the work progresses if some tasks require longer than the estimated times.

