

02

Principal Investigator Joh. B. ... Trainee investigator(if any) _____

Application No 77-020 Supporting Agency(if Non-CRL) _____

Title of study Organic Materials Project status:

and Energy Flow Study. New Study
 Continuation with change
 No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA):

- 1. Source of Population:
 - a) Ill subjects Yes No
 - b) Non-ill subjects Yes No
 - c) Minors or persons under guardianship Yes No

- 5. Will signed consent form be required:
 - a) From subjects Yes No
 - b) From parent or guardian (if subjects are minors) Yes No

- 2. Does the study involve:
 - a) Physical risks to the subjects Yes No
 - b) Social risks Yes No
 - c) Psychological risks to subjects Yes No
 - d) Discomfort to subjects Yes No
 - e) Invasion of Privacy Yes No
 - f) Disclosure of information possibly damaging to subject or others Yes No

- 6. Will precautions be taken to protect anonymity of subjects: Yes No
- 7. Check documents being submitted herewith to Committee:
 - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies).
 - Protocol (Required)
 - Abstract summary (Required)
 - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (REQUIRED)
 - Informed consent form for subjects
 - Informed consent form for parent or guardian
 - Procedure for maintaining confidentiality
 - Questionnaire or interview schedule *

- 3. Does the study involve:
 - a) Use of records (hospital, medical, death, birth or other) Yes No
 - b) Use of fetal tissue or abortus Yes No
 - c) Use of organs or body fluids Yes No

* If the final instrument is not completed prior to review, the following information should be included in the abstract summary:

- 4. Are subjects clearly informed about:
 - a) Nature and purposes of study Yes No
 - b) Procedures to be followed including alternatives used Yes No
 - c) Physical risks Yes No
 - d) Sensitive questions Yes No
 - e) Benefits to be derived Yes No
 - f) Right to refuse to participate or to withdraw from study Yes No
 - g) Confidential handling of data Yes No

- 1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
- 2. Examples of the type of specific questions to be asked in the sensitive areas.
- 3. An indication as to when the questionnaire will be presented to the Board for review.

We agree to obtain approval of the Review Board on Use of Human Volunteers for any changes involving the rights and welfare of subjects before making such change.

Joh. B. ...
Principal Investigator

Trainee

Please return 2 copies of entire protocol to Chairman, Review Board on Use of Human Subjects.

Received 13/9/77

77-020

ABSTRACT SUMMARY

1. The study population is a group of 48 families chosen from a village in which the Principal Investigator has lived for some time. My familiarity with and rapport with the people is the reason for choosing this population.
2. The only risk involved in this study is the disclosure of economic information which is generally widely known in the village. Such data include data on landholding size and cropping pattern.
3. The information is widely known in the village and offers no threat to the individual. All data will, nevertheless, be kept under lock and key.
4. All reports will use fictitious names. No other safe guards are considered necessary.
5. The attached consent form will be signed by all respondents.
6. The interviews take place once a fortnight and involve about 30 minutes each.
7. The individual does not benefit. Society may benefit through better planning of resource use and through the design of better sanitation schemes.
8. The CRL 1974 census on the village was used in drawing the study sample. This information will also be used for determining family sizes and age structures.

STATEMENT

We are doing a study to understand the ways in which materials such as cow dung, rice straw, and water hyacinth are used for fuel, fodder and fertilizer in Bangladesh. We hope that an understanding of this will draw attention of the government to fuel problems in the villages and to inclusion of this factor in planning. We will ask information about the use to which you put your land, the crops and residues which you harvest, the people for whom you work and the people who work for you, as well as the ways in which you use the above materials. You may refuse to give information and withdraw from the study whenever you choose.

Respondent's name:

SECTION I - RESEARCH PROTOCOL

- 1) Title: Organic Materials and Energy Flow Study
- 2) Principal Investigator: John Briscoe
- 3) Starting Date: April, 1977
- 4) Completion Date: September 30, 1977
- 5) Total Direct Cost:
- 6) Abstract Summary:

The use of human excreta as one of several organic material inputs into either bio-gas plants or composting plants appears to be a viable possibility for inducing villagers to change traditional defecation habits. Human excreta would not be used alone, both because the quantity of gas generated from excreta alone would not meet a family's cooking requirements and because efficient fermentation is facilitated by the addition of substances which have a relatively high carbon to nitrogen ratio. The other organic materials -- such as rice straw, water hyacinth and cow dung -- are already carefully used in these frugal economies. If the response of villagers to the technology is to be understood, and if the program is to be designed such that the benefits really do accrue to the poor, then it is essential to understand both the uses to which these organic resources are put and the mechanisms by which distribution of these resources takes place.

In this study we are attempting to estimate the physical quantities of the flows illustrated on Figure 1 (overleaf) and to relate the distribution of these resources to the social relationships obtaining between different classes in the village.

- 7) Review:
 - a) Research Involving Human Subjects: _____
 - b) Research Committee: _____
 - c) Director: _____
 - d) BMRC: _____
 - e) Controller/Administrator: _____

SECTION II - RESEARCH PLAN

A. INTRODUCTION

1. Objective: To describe and quantify the processes by which non-commercial fuel, fertilizer and fodder resources are produced, the uses to which these resources are put, and the relationship between the distribution of these resources and the social structure of a village.

2. Background: Recent publications on the energy sectors of rural areas in the Third World have drawn attention to the fact that the empirical data base for energy planning in the poor countries in general (see Makhijani and Poole, 1975) and Bangladesh in particular (see UNDP, 1977) is almost non-existent. No study of non-commercial organic resource along the lines of the present proposal has been carried out anywhere in the Third World.

The principal investigator has investigated the use of the resource value of human excreta as a method for initiating change in defecation patterns in a doctoral dissertation (Briscoe, 1976). There are few

other publications on this issue in the Indian Sub-continent although there is a significant literature from other countries, such as China (see People's Republic of China, undated). In the Indian Sub-continent there is a large literature on the use of Bio-gas technology, with cow dung as the primary input (see Subrahmanyam, 1977).

The literature on the connection between the organization of production and the distribution of resources in the Indian Sub-continent is a significant one (see, for instance Epstein, 1967, Biggs 1976, Beteille, 1974). Most of this literature has focused on the distribution of food. In a recent paper the principal investigator has drawn together the evidence on the relationship between different systems of production and the distribution of organic resources in the Indian sub-continent (Briscoe, 1977).

The form of this study was developed by the principal investigator after spending one month in the study village, observing these resource use and patterns and learning of the viability of different approaches--

questionnaires, direct observations -- to the acquisition of the required data. Discussions with other professionals, both foreign and local, who have done work in this area have substantially contributed to the design of this study.

3. Rationale: Rural excreta disposal programs in the Indian sub-continent have been conspicuously unsuccessful. Villagers have not changed their traditional defecation habits since the health education programs have failed to convincingly demonstrate that the use of a latrine would yield any personal benefit. Analogous situations involving the use of public goods (such as industrial waste pollution of a river) suggests that until "internal" benefits accompany the socially desirable course of action, individual behaviour will not change. The only way to provide such benefits in an environment such as rural Bangladesh is to utilize the resource value of human excreta. Successful excreta disposal programs in other countries, such as China and Vietnam, have been based on the use of human excreta in compost and bio-gas plants. While composting is

attractive because of the low capital costs, bio-gas plants appear to be most promising in Bangladesh since the per capita returns - and thus incentives - are potentially much greater.

The inputs into a bio-gas plant would be human excreta and other organic materials such as water hyacinth, cow dung, and crop residues, while the outputs would be gas for cooking and organic fertilizer. This study is proposed in the belief that an understanding of the organic material and energy flow system at a micro level is essential for understanding the response, or lack thereof, to the introduction of this technology and for anticipating the physical and social effects of the adoption of this technology.

The major decision in this study was to select a particular level of territorial organization for investigating the problem. A review of a number of more ^{macro} studies of this sort in India (see NCEAR, 1965) and Bangladesh (Farook, 1976) showed that study at this level failed to reveal the mechanisms which

were responsible for the present use of these resources by different groups. An analysis of the "gobar-gas" program of the Indian Government (see Briscoe, 1977) made it abundantly clear that without a much more detailed understanding of these mechanisms these programs were likely to exacerbate an already highly inequitable pattern of resource use in the rural sub-continent.

As has been shown clearly in other enquiries on development issues (see Wolf, 1969, Beteille 1974, Harris 1974 and Lipton & Moore, 1969) it has been geographically proscribed studies of the sorts undertaken by social anthropologists which have proved most insightful in describing the factors which give rise to the little understood institutional structures and resource use patterns. It was thus decided to restrict this study to a part of a single village and to map out the physical and social dimensions of the use of non-commercial organic resources for this proscribed setting. Other work has been done by the principal investigator on data which has been collected.

by others at a regional level. The regional differences will be specifically addressed in drawing conclusions from this village study.

B. SPECIFIC AIMS

1. To determine the quantities of non-commercial fuel, fertilizer and fodder which are produced in a Bangladesh village.
2. To describe the processes by which these resources are distributed from the owners of the means of production to the users of the resources.
3. To describe in quantitative terms the uses to which these resources are put.
4. To describe the differences between the present availability and use of these resources and the availability and use in the past.
5. To outline the consequences of the present trends in social organization for the future generation, distribution and use of these resources.

6. To suggest whether it is possible, given the present social structure, to design a latrine-cum-bio-gas system to serve the poorer classes of rural society.
7. If this is considered possible, to outline the physical, institutional and financial components of such a program.

C. METHODS OF PROCEDURE

The most prominent characteristics of this energy system are a consequence of the poverty of Bangladeshi villages. There are few external energy inputs, energy use patterns are complex and few waste products are produced.

There appear to be four major components of energy generation and consumption, crop production, animal husbandry, domestic activity and local industry. Energy flows into the crop production component in the form of work (from animals and man), machine power (for irrigation, planting, plowing and other agricultural operations), fertilizer (commercial and non-commercial), and seed. Crop product generates energy in the form of food (which may be consumed by the cultivator's family, distributed as a

loan, or payment for work, or sold), fodder, other commercial crops, fuel straw, husks, firewood and fertilizer (green manure, organic material for composting or ash from the direct combustion of crop residues).

Energy flows into the animal husbandry component as fodder, fuel (for fodder preparation), and human energy expended in caretaking. Energy is generated in the form of work (plowing, lifting water for irrigation, leveling), food (milk, meat, fish), fuel (dung), transportation, materials for local industry (hides) and fertilizer.

Domestic activity consumes energy in the form of food, fuel (for cooking, space heating and lighting), human work (including the collecting of fuel, the hauling of water, cooking and other household activities). The primary contribution of energy from this component is human work for agricultural and domestic up-keep, construction, and local industry.

Energy may be used in local industry as fuel, as animal work and human work. In the local industry component we

include all those activities related to food processing (threshing, husking, winnowing, parboiling, transportation) even though the food may be consumed locally. Energy is produced from this activity in the form of processed food, and, indirectly, in the form of products which can be marketed for money, credit or some other form of potential energy. By-products, such as rice husk, are used for fuel or fodder.

Together, these four interlocking components compose a large proportion of the rural energy system, as depicted in the attached figures.

This study will concentrate on collecting data on the amounts of energy resources produced, collected, stored, and used in each of the four components of the system. Greater attention will be paid to the amounts of fuel produced and consumed, since it is in this area that data are least available. Considerable work had been done on the expenditures of energy by humans and animals during work and on the energy values of fuels and manures. What is needed is the coefficients of production and use for Bangladesh.

Interviews should provide the necessary basis for calculating the amounts of energy expended during domestic and agricultural activities by both animals and people. The food energy value of crops can be calculated once the production for a piece of land is determined.

The measurements on fuel consumption require detailed weighing, timing, and observation of activities in all sectors of the system. These measurements should be able to answer explicitly questions about how much energy is produced and consumed in a household, by socio-economic level (large farmers, medium and small farmers, share-croppers, and landless labourers), and by fuel type.

In addition to the measurements, data about the patterns of energy distribution will be collected by observation and through interviews. This information should help answer questions about where each socio-economic group gets its supply of energy, the mechanisms (ownership, purchase, or patronage flow) through which each group obtains its supply of food, fuel, fertilizer and how much energy is related to the land ownership and labour structures of the village.

Along with the data formally collected, we expect to gather information about perceived changes in energy availability over, say, the past twenty years, how the availability of energy was affected by the floods of 1974, how frequently disputes over energy resources (particularly scarce trees and rice straw) arise and how such conflicts are resolved through the dhorba (village trial system).

Data collection should be made over a period of fourteen months to capture seasonal variations and allow for a short period of cross-checking at the end.

The principal investigator has lived in the village to be studied -- Fatepur, Matlab Thana -- for several months. His field assistant, Md. Abdul Bari, is a resident of Fatepur who is intimately acquainted with both the details of the agricultural system of this area and the relationships between different families in the study population. (All of these families have been chosen from the "somaj" to which Md. Bari belongs and the adjacent Hindu community). Md. Bari and the principal investigator have developed a series of forms for recording the data which is to be collected.

A set of these forms is attached.

1. The census form will be collected for all of the members of the village.
2. The series of forms marked "O(ordinary)" are filled out upon consultation with the male and female heads of each family. These data are collected approximately fortnightly from each of the 50 study families.
3. The series of forms marked "S(pecial)" are collected for each of the 50 families at approximately 2 month intervals.

The size of the sample in this village was not chosen on statistical grounds. The choice of only two somaj's was dictated by a desire to deal with only those families with whom the field assistant was intimately acquainted and with whom the principal investigator could become personally familiar with during a one year stay in the village. These two somaj's comprise a total of 100 families. Fifty families were chosen randomly from these 100 families. The figure of fifty was chosen so that one field worker, with an assistant, could cover each family at the intervals which have been specified above.

The analysis of these data will not involve sophisticated analytic techniques. Determining the physical flows and the flows between different classes will be a matter of arithmetic. The difficult part is likely to be the clear definition of the class structure in the village. Both the census data and the data on work patterns will assist in this definition, as will extensive discussions with Md. Bari and other villagers on the relationships between different families.

Guidelines on the appropriate technological and institutional structures for a latrine-cum-bio-gas program will emerge from consideration of the energy requirements of different groups, their access to the necessary resources, and the existing levels at which cooperation between different families takes place.

D. SIGNIFICANCE

This project should make significant contributions in several different areas.

1. As mentioned earlier, it will be the first micro-level study of this resource use system in the Indian sub-

continent, and as such will provide invaluable basic data for planning of the energy and agricultural sector.

2. The description of the social structure of this village as analysed primarily through an examination of the distribution of non-commercial resources, may provide interesting insights to sociologists, economists and anthropologists who are interested in village structure.
3. Many analyses of the health problems of rural India and Bangladesh state that the benefits of improved excreta disposal practices would be great. Latrine programs which have been based on the assumption that health education will induce large numbers of villagers to change their traditional defecation habits have proved to be a failure. The primary motivation for this study is to facilitate the appropriate technological and institutional design of systems for using human excreta as a resource. The hypothesis is that if different defecation habits yield clearly perceived benefits -- in the form of fuel and fertilizer -- then villagers may change their present patterns,

E. FACILITIES REQUIRED

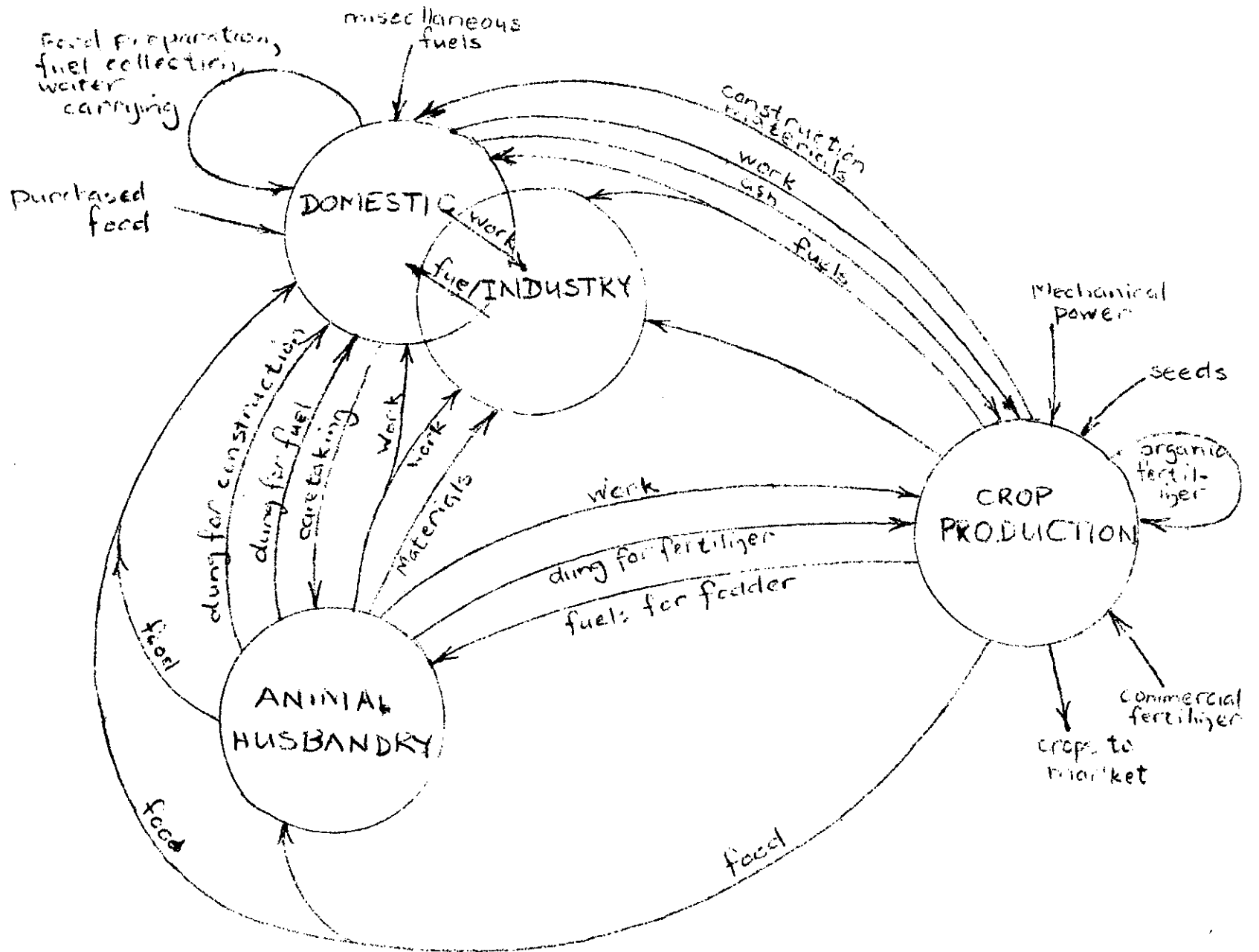
1. Office Space: A one-roomed office/quarters is required for storage of materials and for housing of the principal investigator in Fatepur. (This facility has been budgeted under another protocol.)
2. Laboratory Space: None
3. Hospital Resources: None
4. Animal Resources: None
5. Logistical Support: The only logistical support required is the services of a boatman from Fatepur. This person will serve both as a boatman and as Md. Bari's assistant.
6. Equipment: Stationary. Additional copies of the mimeographed data forms will be required. One spring balance is required. A bengali-english dictionary is required for the use of Md. Bari.
7. Other specialized requirements: None

F. COLLABORATIVE ARRANGEMENTS - None

REFERENCES

1. Beteille, A. (1974): Studies in Agrarian Social Structure, Oxford University Press, New Delhi.
2. Biggs, S.D. (1976): "Science and agricultural technology for Bangladesh", Ford Foundation, Dacca.
3. Briscoe, J. (1977): "The organization of labour and the use of human and other organic resources in rural areas of the Indian sub-continent", paper presented to a conference on sanitation in developing countries today. Oxford.
4. Epstein, S. (1967): "Productive efficiency and customary systems of rewards in rural south India", In Themes in Economic Anthropology, ed. R. Firth, Tavinstock Publications, London 1967.
5. Farouk, A. and M. Ali (1976): The Hardworking Poor: A Survey of how People use their Time in Bangladesh. Dacca University.
6. Harris, M. (1974): Cows, Witches and Wars: The Riddle of Culture, Random House, N.Y.

7. Lipton, M. and M. Moore (1969): "Methodology for village studies", Institute of Development Studies, University of Sussex.
8. Makhijani, A. and A. Poole (1975): Energy and Agriculture in the Third World, Ballinger, Cambridge, Mass.
9. National Council of Applied Economic Research (1965) Domestic Fuel Consumption in Rural India, Delhi, 1965.
10. People's Republic of China (undated): "Experiences of the treatment and reuse of excreta", mimeograph.
11. Subrahmanyam, S.K. (1977) "Bio-gas systems in Asia", Management Development Institute, New Delhi.
12. UNDP (1976): "Bangladesh Energy Sector Study", Dacca.
13. Wolf, E.R. (1969): Peasant Wars of the Twentieth Century, Harper and Row, N.Y.
14. Briscoe, J. (1976): "Rural Public Health in India -- the case of excreta disposal", Ph.D. dissertation, Harvard University.



VILLAGE ENERGY SYSTEM

SECTION III - BUDGET

A. DETAILED BUDGET

<u>1. PERSONNEL SERVICES</u>				<u>P r o j e c t</u>	
<u>N a m e</u>	<u>Position</u>	<u>% of Effort</u>	<u>Annual Salary</u>	<u>Requirements</u>	
				<u>TAKA</u>	<u>DOLLARS</u>
John Briscoe	Investigator	30%	\$ 27500		8250
M.R. Khan	Supervisor	65 days	Tk.26868	6717	
Abdul Bari	Field Asstt.	260 "	Tk. 8208	8208	
Abul Kasem	Boatman	260 "	Tk. 2400	2400	
20% allowance for local salry changes				3465	
Sub-total				<u>20790</u>	<u>8250</u>
<u>2. SUPPLIES & MATERIALS</u>					
<u>I t e m s</u>	<u>Unit Cost</u>	<u>Amount Required</u>			
Pens (ballpoint)	\$ 0.13	20			2.60
Pencils	Tk.1.50	50		75	
Paper	Tk.5.00	100		500	
Sub-total				<u>575</u>	<u>2.60</u>
<u>3. EQUIPMENT</u>					
<u>I t e m</u>	<u>Unit Cost</u>	<u>Amount Required</u>			
Bangla/English Dictionary	Tk.30.00	1		30	
Spring balance	\$ 50	1			50
Sub-total				<u>30</u>	<u>50</u>

4.	<u>PATIENT HOSPITALIZATION</u>	-	None		
5.	<u>OUTPATIENT CARE</u>	-	None		
6.	<u>CRL TRANSPORT</u>	-	None		
7.	<u>TRAVEL AND TRANSPORTATION OF PERSONS</u>		None		
8.	<u>TRANSPORTATION OF THINGS</u>	-	None		
9.	<u>RENT, COMMUNICATIONS & UTILITIES</u>	-	None		
10.	<u>PRINTING AND REPRODUCTION</u>				
	Mimeographing of data forms				
	Census form (5 x 200)				
	Ordinary form (8 x 2000)	Tk. 0.20	24,000	4,800	
	Special forms (14 x 500)		pages		
	Xerox	Tk. 1.08	5,000	5,400	
		Sub-total		10,200	-
11.	<u>OTHER CONTRACTUAL SERVICES</u>	-	None		
12.	<u>CONSTRUCTION, RENOVATION, ALTERATIONS</u>	-	None		

Project
Requirements
TAKA DOLLARS

B. BUDGET SUMMARY

<u>CATEGORY</u>	<u>YEAR - 1</u>	
	<u>Taka</u>	<u>Dollars</u>
1. Personnel	20790	82.50
2. Supplies	575	2.60
3. Equipment	30	50.00
4. Hospitalization	-	-
5. Outpatients	-	-
6. CRL Transport	-	-
7. Travel Persons	-	-
8. Transportation Things	-	-
9. Rent/Communication	-	-
10. Printing/Reproduction	10200	-
11. Contractual Service	-	-
12. Construction	-	-
	<hr/>	<hr/>
Total	31595	8302.60
	<hr/>	<hr/>
Total \$	10,354	

ORGANIC MATERIALS STUDY

John Eriscoe and Abdul Bari

Cholera Research Laboratory
Matlab, Comilla District,
Bangladesh

1. CENSUS

Data to be collected from
the head of the family

Respondent's name:

Bari name:

Family number:

Date of interview:

We want the following information for the year starting with Boishakh mash -- April 15 -- 1976 and ending on the last day of Choddro mash-- April 14 -- 1977.

A1: Quantity of land available to this person:

Owned by himself (sawtangso)	Land taken from another:		
	From whom?	Sawtangso?	Borga, Kawt or Pawshani?

A2: Land utilization:

Farmed himself (sawtangso)	Land given to others:		
	To whom?	Borga, Kawt or Pawshani?	Sawtangso?

Remarks:

A3: Ownership of trees:

Type of tree:							
Number owned:							

A4: In the last year, how much wood was obtained from these trees? ___ maund.

Used by his family: md.		Sold: md.	Used by others: md.		
Purpose	Quantity	Taka received	Who?	Quantity?	Why given?

Remarks (including any purchase of wood):

DISTRIBUTION OF NARA AND KHER FROM AMON PADDY

A7: Nara from your amon paddy field:

1. Carried to your house from your fields: _____ phoza.					2. Carried by others from your fields: _____ phoza.			3. Eurnt on your fields: _____ phoza.
1a: Used by your family:		1b: Used by others:			Who?	How many phoza?	Why given to them?	
Purpose	Phoza	Who?	Phoza?	Why given to them?				

Remarks:

A8: Kher from your amon paddy:

Used by your family _____ phoza.		Used by others: _____ phoza.		
Purpose	How many phoza?	Who?	Phoza?	Why did you give them kher?

Remarks:

A9: Nara from others amon paddy fields:

From whose field?	Phoza?	If permission was given, why was the nara given to you?

A10: Kher from others amon paddy:

From whom?	Phoza?	Why was it given?

Remarks:

ANIMALS:

A11: In the last year, how much meat from the following animals was eaten by your family? (in seer)

	From your animals (seer)	Bought (seer)	Received from others:			Remarks
			From whom?	Quantity (seer)	Why given to you?	
Cattle						
Goat						
Chicken						
Duck						

A12: In the last year, how many seers of meat did you give away or sell?

	Sold	Given away:			Remarks
		To whom?	Quantity	Why given to them?	
Cattle					
Goat					
Chicken					
Duck					

A13: Cattle owned at present:

	Male		Female		Bullock		Remarks
	#	Approximate weight	#	Approximate weight	#	Approximate weight	
Big							
Medium							
Small							

A14: Goats owned at present:

	Number	Approximate weight	Remarks
Big			
Medium			
Small			

A15: Number of chickens owned at present: ____.

Remarks:

A16: Number of ducks owned at present: ____.

Remarks:

A17: Quantities of fish caught and consumed by your family last year:

Quantity of fish caught by your family last year _____ seer.

Quantity of fish eaten by your family last year _____ seer.

Fish given to others:

To whom?	Quantity	Why given?

Quantity of fish sold last year _____ seer.

Taka received for these fish Tk _____

Fish received as gift:

From whom?	Quantity	Why given?

Quantity of fish bought last year (seer): _____

Taka paid for fish last year : Tk. _____

Remarks:

ORGANIC MATERIALS STUDY

John Briscoe and Abdul Bari

Cholera Research Laboratory
Matlab, Comilla District,
Bangladesh

2. REGULAR ACTIVITIES QUESTIONNAIRE
PART I

Data to be collected from head
of family at 15 day intervals

Respondent's name:

Bari name:

Family number:

Date of interview:

SECTION ONE: The activities of the previous day.

Number of seers of milk from these cattle yesterday ____ (seers).

						From	Time
						To	
						Description of activity (sleeping, ploughing, grazing,...)	
						Where did the activity take place?	
						Owner of that place?	
						Type	In this time, what did they eat?
						Amount (phoza,...)	
						Estimated quantity of gobar produced in this time (seer, ora,...)	
						Who collects the dung?	Does your family collect the dung? Yes No
						What will this gobar be used for?	
						What part of the total collected will be used for each purpose (in annas)	
						Estimated total collected (in ora...)	
						Who collects the dung from here (if anyone)?	
						Who looked after the cattle in this time?	
						How much time was required (minutes)?	
						Remarks	

B1: The activities of this man's ____ (number) cattle on the previous day

CROP PRODUCTION

B2: Agricultural work (including irrigation) done by your family, on your fields and the fields of others, yesterday:

In your family, who worked?	For whom did this person work?	Description of work (including crop):	Hours spent on each type of work:	Payment (if any):	Remark

B3: Agricultural work done by others on your fields yesterday:

Person's name	Description of work	Hours on each work	Payment	Remarks

B4: Work by others's cattle for you yesterday:

	Size of animals		
	Big	Medium	Small
Number of animals			
Owner			

Description of work done	Hours worked yesterday	Payment	Remarks (including reasons why they worked for you if no payment was made)

FISHING

B5: Work in connection with fishing (making nets, fixing boats, fishing...) done by men, women and children of your family yesterday:

Name	For whom?	Description of work	Hours spent	Payment	Remarks

SECTION TWO: Activities over the past two weeks

C1: Planting over the last two weeks:

Have you planted any crops in the fields which you farm over the last 2 weeks?

Yes

No

If yes, ask the following questions

If no, go to question C2.

Type of crop planted	
Size of field(s) (sawtangso)	
Amount of seed used:	
Source of seed:	
Previous crop on the field:	
Owner of the field:	

Remarks:

C2: Fertilizing over the last two weeks:

Have you fertilized any of the fields which you farm, with either chemical fertilizer or manure, over the last two weeks?

Yes

No

If yes, ask the following questions.

If no, go to question C3.

Type of fertilizer used:	
Size of field (sawtangso)	
Crop type	
Source of fertilizer	
Estimated quantity of fertilizer:	

Remarks: (including the actual weight of one unit of gobar -- perhaps an ora):

C3: Harvesting over the last two weeks:

Have you harvested any crops (including doinshah and kachuri panna) in the fields which you farm in the last two weeks?

Yes

No

If yes, ask the following questions

If no, do not ask any further questions from this and the next page.

What crops have been harvested from your fields in the last two weeks?

Crop type:	
Area of field(s)	
Yield (maund or seer)	
Quantity sold, or to be sold:	
Given or to be given, to others:	Quantity
	Reason why given

Remarks:

C4: Residues from the fields which you farm, which have been harvested in the last two weeks.

i) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: _____ phoza.					2. Carried by others from your fields: _____ phoza.			3. Left on your fields:	
1a: Used by your family:		1b: Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

ii) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: _____ phoza					2. Carried by others from your fields: _____ phoza.			3. Left on your fields:	
1a. Used by your family:		1b. Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

iii) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: _____ phoza.					2. Carried by others from your fields: _____ phoza.			3. Left on your fields.	
1a. Used by your family:		1b. Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

Remarks: (including the weight of each of the units -- say phoza -- used for measuring the amount of residue):

ORGANIC MATERIALS STUDY

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Matlab, Comilla District,
Bangladesh

2. REGULAR ACTIVITIES QUESTIONNAIRE
PART II

Data to be collected from female
head of family at 15 day intervals.

Respondent's name:

Bari name:

Family number:

Date of interview:

D1:

SECTION ONE: We want to know how much fuel has been collected for storage -- not for use on the day of collection -- over the past two weeks.

Type of fuel (nara, gobar, lakri, kachuri panna...)				
Approximate quantity collected in last two weeks:				
Who collected this fuel?				
Where was the fuel collected from?				
Time taken for collection by each person:				
(Interviewer: Determine total time taken for collecting this fuel in this two weeks):				
Who owns the source (land, tree, cow, etc. from which the fuel was collected)?				
Does the owner know that you collected the fuel?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
If the owner <u>did</u> allow you to collect the fuel, why did he allow you to do so?				

Remarks:

S

ORGANIC MATERIALS STUDY

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3. COOKING FUELS QUESTIONS AND OBSERVATIONS

Data to be collected
from the woman responsible for cooking.

Respondent's name:

Bari name:

Family number:

Date of interview:

SECTION TWO: D2: Of the following types of work, which did the men, women and children of this family do YESTERDAY?

	Type of Activity	Name(s) of person(s)	Time spent by each person	Remarks
Work with crops in the bari (such as threshing, husking, drying and parboiling)				
Fuel collection (specify type of fuel)				
Food preparation (including cooking)				
Other work in the bari (such as sewing katha)				
Other work in the field by women and children (such as picking dal, picking chillies)				

ORGANIC MATERIALS STUDY

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Bangladesh

3. COOKING FUELS QUESTIONS AND OBSERVATIONS

Data to be collected
from the woman responsible for cooking.

Respondent's name:

Bari name:

Family number:

Date of interview:

E1: Morning cooking: Yes ___ no ___: If yes, expected starting time ____.

		Type of fuel (nara, patkuri, kachuri panna..)				
Quantity of fuel (kg. or other units)	Before cooking					
	After cooking (remainder)					

Fuels which were not weighed:	Type			
	Amount (Estimated)			

Type of food cooked					
Estimated quantity (seer)					

Number of people who eat the food prepared: Men __, women __, boys __, girls __.

E2: Noon cooking: Yes ___ No ___: If yes, expected starting time ____.

		Type of fuel (nara etc.)				
Quantity of fuel (kg or other units)	Before cooking					
	After cooking (remainder)					

Fuels which were not weighed:	Type			
	Amount (Estimated)			

Type of food cooked					
Estimated quantity (seer)					

Number of people who eat the food prepared: Men __, women __, boys __, girls __.

E3: Afernoon/evening cooking: Yes __, no __. If yes, expected starting time ____.

		Type of fuels (nara, etc.)				
Quantity of fuel (kg or other units)	Before cooking					
	After cooking (remainder)					

Fuels which were not weighed:	Type			
	Amount (Estimated)			

Type of food cooked					
Estimated quantity (seer)					

Number of people who eat the food prepared: Men __, women __, boys __, girls __.

E4: What is done with the ash (sai) from the chullah?:

ORGANIC MATERIALS STUDY

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Bangladesh

2. REGULAR ACTIVITIES QUESTIONNAIRE
PART I

Data to be collected from head
of family at 15 day intervals

Respondent's name:

Bari name:

Family number:

Date of interview:

SECTION ONE: The activities of the previous day.

Number of seers of milk from these cattle yesterday (seers).

						From	Time
						To	
							Description of activity (sleeping, ploughing, grazing,...)
							Where did the activity take place?
							Owner of that place?
						Type	In this time, what did they eat?
						Amount (phoza,...)	
							Estimated quantity of gobar produced in this time (seer, ora,...)
						Who collects the dung?	Does your family collect the dung? Yes No
						What will this gobar be used for?	
						What part of the total collected will be used for each purpose (in annas)	
						Estimated total collected (in ora...)	
						Who collects the dung from here (if anyone)?	
							Who looked after the cattle in this time?
							How much time was required (minutes)?
							Remarks

BI: The activities of this man's ___ (number) cattle on the previous day

CROP PRODUCTION

B2: Agricultural work (including irrigation) done by your family, on your fields and the fields of others, yesterday:

In your family, who worked?	For whom did this person work?	Description of work (including crop):	Hours spent on each type of work:	Payment (if any):	Remark

B3: Agricultural work done by others on your fields yesterday:

Person's name	Description of work	Hours on each work	Payment	Remarks

B4: Work by others cattle for you yesterday:

	Size of animals		
	Big	Medium	Small
Number of animals			
Owner			

Description of work done	Hours worked yesterday	Payment	Remarks (including reasons why they worked for you if no payment was made)

FISHING

B5: Work in connection with fishing (making nets, fixing boats, fishing...) done by men, women and children of your family yesterday:

Name	For whom?	Description of work	Hours spent	Payment	Remarks

SECTION TWO: Activities over the past two weeks

C1: Planting over the last two weeks:

Have you planted any crops in the fields which you farm over the last 2 weeks?

Yes

No

If yes, ask the following questions

If no, go to question C2.

	Type of crop planted		
Size of field(s) (sawtangso)			
Amount of seed used:			
Source of seed:			
Previous crop on the field:			
Owner of the field:			

Remarks:

C2: Fertilizing over the last two weeks:

Have you fertilized any of the fields which you farm, with either chemical fertilizer or manure, over the last two weeks?

Yes

No

If yes, ask the following questions.

If no, go to question C3.

	Type of fertilizer used:		
Size of field (sawtangso)			
Crop type			
Source of fertilizer			
Estimated quantity of fertilizer:			

Remarks: (including the actual weight of one unit of gobar -- perhaps an ora):

C3: Harvesting over the last two weeks:

Have you harvested any crops (including doinshah and kachuri panna) in the fields which you farm in the last two weeks?

Yes

No

If yes, ask the following questions

If no, do not ask any further questions from this and the next page.

What crops have been harvested from your fields in the last two weeks?

	Crop type:		
Area of field(s)			
Yield (maund or seer)			
Quantity sold, or to be sold:			
Given or to be given, to others:	Quantity		
	Reason why given		

Remarks:

C4: Residues from the fields which you farm, which have been harvested in the last two weeks.

i) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: ____ phoza.					2. Carried by others from your fields: ____ phoza.			3. Left on your fields:	
1a: Used by your family:		1b: Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

ii) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: ____ phoza					2. Carried by others from your fields: ____ phoza.			3. Left on your fields:	
1a. Used by your family:		1b. Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

iii) Residue type (nara, patkuri,...) _____.

1. Carried to your house from your fields: ____ phoza.					2. Carried by others from your fields: ____ phoza.			3. Left on your fields.	
1a. Used by your family:		1b. Used by others:							
Purpose	Phoza	Who?	Phoza?	Why given to them?	Who?	Phoza?	Why given to them?	Phoza?	Why left?

Remarks: (including the weight of each of the units -- say phoza -- used for measuring the amount of residue):

ORGANIC MATERIALS STUDY

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Bangladesh

4. WEIGHTS OF ORGANIC MATERIALS
PART I

To be collected from male heads
of family at about 2 month intervals.

Respondent's name:

Bari name:

Family number:

Date of interview:

F1: Does this family own any cattle? (See the answer to question B1.)

Yes ___ No ___

If yes, continue.

If no, go to question F2.

In answer to question B1 the farmer told you that his cattle produced a certain number of oras of gobar yesterday. Ask the farmer to show you what he means by one ora of gobar. Record the following weights for one ora of gobar for this man.

Weight of gobar + basket kg.	Weight of basket empty kg.	Therefore, weight of one ora of gobar as specified by this farmer kg.

F2: Has this family harvested any crops from the fields which they farm over the past two weeks? (See the answer to question C4.)

Yes ___ No ___

If yes, continue

If no, go to question F3.

In response to question C4 the head of the family told you of the crop residues from his fields over the past two weeks. For each of the residues which have been collected in this time by him, ask him to show you what he means by one phoza (or whatever unit he uses). Weigh one unit of each residue.

Residue type	Dry or wet?	Unit (phoza etc.)	Weight of one unit (kg.)

(Note: In the case of some residues -- such as jute -- it may be necessary to return several weeks later to weigh the residue. If so, record the family number and the task to be performed under the appropriate date in your diary and return on that date.)

F3: Has this family used any gobar fertilizer over the past two weeks? (See the answer to question C2.)

Yes ___ No ___

If yes, continue

If no, this questionnaire is finished

In response to question C2, the farmer told you that he had applied a certain number of units (perhaps ora) of gobar sar to his fields. Ask him to show you one unit of this gobar sar and weigh the unit which he shows you.

Unit (ora etc.)	Weight of gobar sar + basket (kg.)	Weight of empty basket (kg.)	Therefore, weight of one unit of gobar sar (kg)

ORGANIC MATERIALS STUDY

John Briscoe and Abdul Bari

Cholera Research Laboratory
Matlab, Comilla District,
Bangladesh

2. REGULAR ACTIVITIES QUESTIONNAIRE
PART II

Data to be collected from female
head of family at 15 day intervals.

Respondent's name:

Bari name:

Family number:

Date of interview:

D1:

SECTION ONE: We want to know how much fuel has been collected for storage -- not for use on the day of collection -- over the past two weeks.

	Type of fuel (nara, gobar, lakri, kachuri panna...)			
Approximate quantity collected in last two weeks:				
Who collected this fuel?				
Where was the fuel collected from?				
Time taken for collection by each person:				
(Interviewer: Determine total time taken for collecting this fuel in this two weeks):				
Who owns the source (land, tree, cow, etc. from which the fuel was collected)?				
Does the owner know that you collected the fuel?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
If the owner <u>did</u> allow you to collect the fuel, why did he allow you to do so?				

Remarks:

SECTION TWO: D2: Of the following types of work, which did the men, women and children of this family do YESTERDAY?

	Type of Activity	Name(s) of person(s)	Time spent by each person	Remarks
Work with crops in the bari (such as threshing, husking, drying and parboiling)				
Fuel collection (specify type of fuel)				
Food preparation (including cooking)				
Other work in the bari (such as sewing katha)				
Other work in the field by women and children (such as picking dal, picking chilies)				

ORGANIC MATERIALS STUDY

John Briscoe and Abdul Bari

Cholera Research Laboratory

Matlab, Comilla District

Bangladesh

4. WEIGHTS OF ORGANIC MATERIALS
PART II

To be collected from the female head
of family at about 3 month intervals.

Respondent's name:

Bari name:

Family number:

Date of interview:

G1: Has this family collected fuel over the past two weeks for storage?
(see the answer to question D1)

Yes ___

No ___

If yes, continue

If no, this questionnaire
is finished.

In answer to question D1 the woman told you that she collected a certain number of units of certain fuels. Ask the woman to show you what she means by one unit of each fuel -- one ora of gobar, one pheza of nara, one maund of lakri etc. --and record the actual weight of one unit of each fuel.

Fuel type (nara etc.)	Unit (seer, ora, etc.)	Weight of one unit (kg.)

Format for the Preparation of Protocols

SECTION I-RESEARCH PROTOCOL

It consists of the cover page to be obtained by the investigator from the Director's Office.

SECTION II-RESEARCH PLAN

- A. INTRODUCTION
 - 1. Objective
 - 2. Background
 - 3. Rationale
- B. SPECIFIC AIMS
- C. METHODS OF PROCEDURE
- D. SIGNIFICANCE
- E. FACILITIES REQUIRED
- F. COLLABORATIVE ARRANGEMENTS

SECTION III - BUDGET

A. Detailed Budget

(As per format available at the Director's office which includes the following Headings)

Category

- 1. Personal Services
- 2. Supplies and Materials
- 3. Equipment
- 4. Patient Hospitalization
- 5. Outpatient Care
- 6. CRL Transport
- 7. Travel and Transportation of Persons
- 8. Transportation of Things
- 9. Rent, Communications & Utilities
- 10. Printing and Reproduction
- 11. Other Contractual Services
- 12. Construction, Renovation, Alterations

B. Budget Summary

With the same categories as above.

GUIDELINES FOR RESEARCH PROTOCOL REVIEW

The following guidelines are to be used to prepare written comments on protocols assigned to you.

1. Description

Write a concise description of the proposal, including aims, procedures, and background, as appropriate to a clear description of the project proposal.

2. Adequacy of Background Information

Does the protocol indicate thorough understanding of the state of knowledge in the field?

Has all relevant work at CRL been cited?

3. Critique of Research Plan

Discuss the strengths and weaknesses of each aspect of the proposal as outlined below:

Is the rationale for this research clearly stated, and supportable by the background information given?

Are the aims well defined, and logical?

Is the approach to the problem valid and likely to yield useful results?

Is the experimental design adequate? Are the numbers of subjects/animals/experiments/justified? Has provision been made for controlling for confounding variables? Is sampling, and/or subject stratification appropriate or required?

Are all procedures feasible? Are they adequately described?

Will the data generated answer each of the questions outlined in the specific aims?

Has careful attention been given to all details, and procedures for data analysis?

Is the analytical framework adequate? Has sufficient attention been given to statistical problems in study design and data analysis?

4. Assessment of Relevance

Will the research produce new data and concepts, or confirm existing hypothesis?

What is the significance and pertinence of the proposed study with regard to the state of the field and importance of the aims?

5. Facilities Required

Are the requirements for facilities adequately presented?

Are the requirements for facilities justified by the research plan?

6. Budget

Is it realistic in terms of the aim and methodology?

Are all items justified on the basis of the approach, procedures, and analysis of data proposed?

Itemize, and provide specific reasons for added requirements, or reduction in the amount proposed.