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**SOCIO-ECONOMIC SURVEY FOR CSIR DEVELOPED TECHNOLOGY**

**TRANSFER PACKAGE TO SELECTED RESIDENTS OF THE**

**ASUOGYAMAN DISTRICT**

**(CSIR-FRI/RE/QW/1997/015)**



**By**

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Accra  
February, 1998.

# Executive Summary

This report is based on a socio-economic survey and studies conducted at 4 sample villages in the Asuogyaman District in February 1998 as part of the MEST/CSIR technology transfer package for residents of the Asuogyaman District.

## **Findings:**

The socio-economic survey and studies was carried to identify the specific CSIR developed technology/technologies in a package of technologies which is/are best suited for a the sample residents of Adjena, Adumasa, Gyakiti and Tosen townships if the Asuogyaman District. At Adjena, team encountered the agitation of the residents over alleged poor treatment by the government and the Volta River Authority (VRA). The main complaints of the people of Adjena centred around the lack of access to the nearby national power grid, which the construction of the Volta Dam led to their displacement from their original homelands, lack of good drinking water and poor road network. The team however managed to get a sample of residents to express interest in the CSIR developed technologies. The people of Adumasa shared similar problems with those at Adjena. At Gyakiti, the residents were not interested in the CSIR technology package but at Tosen the interest in the CSIR technologies were very satisfactory. Other socio-economic, environmental findings in the Asuogyaman District have also been outlined in this report.

## **Recommendations:**

For the residents of Adjena, the team recommended the transfer of poultry, liquid soap and mushroom cultivation. The residents of Adumasa were recommended to acquire liquid soap and snail farming technologies. Liquid soap and poultry production technologies were recommended for both the residents of Gyakiti and Tosen.

Policy recommendations have also been outlined for the Asuogyaman District Assembly, the Ministry of Environment, Science and Technology (MEST) and the Council for Scientific and Industrial Research (CSIR). The report also put across some recommendations for the training programme that forms the next phase of the CSIR technology transfer package.

## **1.0 Introduction**

In the early part of December 1997, the Honourable Minister of Environment, Science and Technology invited the Director-General and other Directors of the Council of Scientific and Industrial Research (CSIR) to a meeting to discuss the growing degradation of the slopes of the Volta Lake; its consequences on siltation and weed invasion of the lake. As part of the crash programme being initiated by the government to address the situation, the CSIR was tasked to transfer some of its developed technologies as non-farm income sources for the residents of Asuogyaman District bordering the Volta lake and the Akosombo dam in particular. In the latter part of December, 1997, the Director-General of the CSIR dispatched a team of experts from selected Institutes of the CSIR to undertake a general survey to identify non-income farming sources for the residents of Asuogyaman District living along the Akosombo dam slopes. The CSIR team in its report, proposed a detailed socio-economic survey and studies to be conducted as part of the technology transfer package.

This proposal was accepted and a CSIR Socio-Economic Survey and Studies team was set up. The team conducted the socio-economic survey and studies from 2nd February to 6th February, 1998 in the Asuogyaman District. The following report, submitted by the CSIR Socio-Economic Survey and Studies team, is the outcome of the survey and studies.

### **1.1 Background Information**

The Asuogyaman District was established by the Local Government Instrument, L.I. 1431 of 1988, under a government programme that sought to enhance participatory democracy and local government administration. The headquarters of the district is at Atimpoku. The present District Chief Executive (DCE) responsible for the political and general administration in the district is Mr. Edward Aboagye Dwamena.

The district is predominantly rural in nature with a current estimated population of 80,529. Agriculture is consequently the main livelihood of the residents, with about 55 to 60 per cent of the total population earning their income from full time farming. Some of the residents are engaged in fishing while others are full time salary earners

with the Volta River Authority (VRA), the Volta River Estates, Akosombo Textiles Company and Juapong Textiles Limited. Agriculture in the district is mainly at the subsistence level with the noticeable absence of large-scale commercial farming with the exception of the Volta River Estates which produces banana for export and domestic consumption. The cultivation of various types of food crops is undertaken by small scale peasant farmers with farm sizes between 1 to 8 hectares. The major crops cultivated in the district include maize, cassava, pineapple, pawpaw, banana, domestic and exotic vegetables. Agricultural production and productivity in the district is low, with a very low application of improved and modern agricultural technologies.

Social development indicators of the district show that there is a high drop rate of basic education between the Primary and Junior Secondary School (JSS) levels, low enrolment in JSS, dilapidated school buildings, furniture, classrooms and workshops. Health facilities are woefully inadequate and except for a VRA hospital at Akosombo, there is presently no district hospital or health centre to co-ordinate health programmes in the district. The district has a high incidence of malaria, low level of nutrition, and high incidence of water borne diseases. Present environmental problems in the district range from rampant incidence of bush fires; uncontrolled farming on the slopes of the Volta Lake to uncontrolled development.

The district also has inadequate marketing facilities which has resulted in poor patronage of the few markets in the district and consequently low local revenue generation machinery in the district. Road network in the district is very poor and telecommunications network, inadequate.

In spite of the above, the district has promising development potentials. Rich agricultural land is available, quarry development potential is high due to the presence of suitable rock formations. There is the existence of large water bodies for fishing and irrigation, water transport and tourism. There is also the existence of several undeveloped tourist attraction sites and spots. One main administrative constraint facing the district assembly is the present administrative control by the VRA over the township of Akosombo. This situation has arisen because of the apparent conflict between the VRA Act 1961 and the legal enactment establishing the Asuogyaman

District. The Asuogyaman District has outlined a five-year development plan from 1996 to 2000 under which top priority has been given to raising of the standard of living of the residents of the Asuogyaman District.

Therefore, the CSIR technology transfer package aimed at transferring suitable technologies to the residents of the district are perfectly in line with the district's own five year development plan as well as the government's poverty alleviation programme.

## **1.2 Objective of Socio-Economic Survey and Studies**

In order to ensure the success of the technology transfer package and programme of the CSIR to the residents of the Asuogyaman District, the main objective of this socio-economic survey and studies was to:

**identify the specific CSIR developed technology/technologies in a package of technologies which is/are best suited for an identified residents of selected villages in the Asuogyaman District.**

The socio-economic survey and studies team was therefore tasked with the recommendation of specific technologies among a selected package of CSIR technologies best suited to be transferred to the selected villages of the district.

## **1.3 Scope and Limitations**

The selected CSIR developed technologies were:

- **Poultry Production**
- **Fish Farming**
- **Fish Processing**
- **Snail Farming**
- **Mushroom Production**
- **Grass Cutter Production**
- **Liquid Soap Production**

The above technology package was recommended by the CSIR team which undertook the initial general survey in December 1997. It is quite possible that other CSIR developed technologies could be also transferred successfully to the residents and

target group. The socio-economic survey was limited to the following selected villages:

- **Adjena**
- **Adumasa**
- **Gyakiti**
- **Tosen**

The above sample size of four villages could not be a true representative of the district. The survey and studies was handicapped by the provision of adequate finance to cover other villages and towns of the district. In addition, the socio-economic survey and studies was carried out over a period of five days. It would have been useful if the period of the survey and studies were extended; but financial resources were limited.

## **1.4 Composition of Socio-Economic Survey and Studies**

### **Team**

The CSIR team that conducted this socio-economic survey/studies was composed of the following CSIR staff:

- Mr. Edward M. Abakah, Scientific Officer, Science and Technology Policy Research Institute (STEPRI).
- Mrs. Wilhemina Quaye, Assistant Scientific Officer, Food Research Institute (FRI).
- Mr. M.H. Duku, Scientific Officer, Institute for Industrial Research (IIR).
- Mr. E.A Ofori, Marketing Officer, Central Business Development Union (CBDU).
- Mr. Richard Owusu, Marketing Officer, Central Business Development Unit (CBDU).
- Mr. William Boadu, Scientific Officer, Institute for Science and Technology Information (INSTI).

In addition to the above team, Mr. W.W.K Adu-Sakodie, Acting Commercial Director of the CSIR-CBDU led and co-ordinated the survey and studies work.



## **1.5 Methodology**

In pursuance of the objectives of the socio-economic survey, the under mentioned methods were used:

### **i) Assembly of Socio-Economic, Environmental and other Secondary Information / Data**

Secondary information which are relevant to the study were gathered through personal interviews with the District Assembly officials and publications available at the offices of the Asuogyaman District Assembly. The information and data assembled were then analysed.

### **ii) Assembly of Primary Data**

Primary data and information on the socio-economic and socio-cultural background of the people in the study area as well as their choices of available CSIR technology transfer package were obtained through a participatory appraisal approach. This was done through personal interactions with community members and key informants, direct observations and group discussions using checklist. Interaction and meetings among the research team members were also made to review the checklist, information and data assembled in the course of conducting the survey.

A sample of 197 residents was interviewed. This consisted of 48; 20; 47 and 82 in Ajena; Adumasa; Gyakiti and Tosen respectively. The entire socio-economic survey and studies was audio-visually recorded for publicity purposes.

## **1.6 Organisation of Report**

The report has been divided into 3 main sections including this introductory section. Section 2 contains the findings of the socio-economic survey and studies which forms the basis for recommendations for the suitable technology packages as well as other policy recommendations. Section 3 carries the recommendations of the team with respect to the CSIR developed technology package and policy recommendations for the Asuogyaman District Assembly, MEST, and the CSIR. Some recommendations for the training phase of the CSIR technology transfer package and programme have also been made.

## 2.0 Findings of the Socio-Economic Survey and Studies

To assess a suitable technology or technologies for the sampled villages, there was the need to use a set of criteria. The following set of criteria was used to recommend suitable technology/technologies to be transferred to the sample villages:

- Number of People Interested
- Availability and Proximity to Raw Material/Inputs Sources
- A Priori Experience of Trainees
- Socio-Cultural Background
- Availability of Water/Power Utilities
- Impact of Technology on Environment
- Availability/Proximity to Potential/Existing Market

Table 1 gives a summary of the number of the sampled residents of the selected villages in the Asuogyaman District who were interested in a specific CSIR technology in the package of technologies:

**Table 1 : Results of Interested Sampled Residents of Selected Villages in Asuogyaman District with respect to the CSIR Technology Transfer Package.**

TECHNOLOGY TRANSFER PACKAGE	ADJENA	ADUMASA	GYAKITI	TOSEN
POULTRY	33.3%*	-	-	31.7%*
FISH FARMING	2.8%	-	-	3.7%
FISH PROCESSING	-	-	-	2.4%
SNAIL FARMING	16.7%*	40.0%*	-	15.9%
MUSHROOM PRODUCTION	19.4%*	15.0%	-	12.2%
GRASSCUTTER	11.1%	5.0%	-	11.0%
LIQUID SOAP	16.7%*	40.0%*	-	23.2%*

*Note: The figures have been expressed in percentage of the total number of the sampled residents. Those marked with \* are those highly preferred by majority of the residents in a sample village.*

## 2.1 Summary of Findings at Adjena:

Adjena is a farming community. The people are presently involved in the cultivation of cassava, maize, plantain and vegetables. The women are also involved in other non-farming income generating activities such as trading and food preparation. Most of the men however, depend solely on income from agricultural activities. Currently, the farmer folks have no available land to farm. This has led to the migration of the young men to urban centres for jobs. Adjena has a Technical Secondary School, Clinic and Police Station. Social amenities lacking include electricity, potable drinking water, good housing systems and road network.

There are no recreational facilities but an annual yam festival has been instituted and celebrated. No farming activities are undertaken on Thursdays. Properly organised group association is also non-existent. The main problem facing the people is the acquisition of land for farming so food availability is a constant problem.

The people are interested in poultry, snail and mushroom cultivation.

## 2.2 Summary of Findings at Adumasa

The people of Adumasa are also farmers, Their problems were common to that of Adjena. They were interested in snail and liquid soap production.

## 2.3 Summary of Findings at Gyakiti

The vegetation around Gyakiti is mainly semi-forest. They are mainly farmers with farmlands far from the lakeside. They cultivate cassava, plantain and vegetables such as tomato. The people of Gyakiti were not much interested in the CSIR technology transfer package but rather needed farming inputs, infrastructural facilities needed include good road network, potable drinking water and electricity. The road in the area should be rehabilitated and land compensation package settled.

## 2.4 Summary of Findings at Tosen

The residents of Tosen are farmers. Land acquisition is either by inheritance from family (family land) or from land owners on hire basis. Crops cultivated include cassava, maize, water yam, cocoyam and vegetables. No farming activity is done on Fridays. The town has basic social amenities such as potable water, electricity and good road network. Tosen also share facilities such as clinic and police station a neighbouring Boso township.

Tosen is located at about 12 kilometres from a market centre at Agbeni which attract buyers from places like Ho, Tema, Suhum, Koforidua and Kumasi.

Problems facing the people include high labour cost, low agricultural productivity and irregular supply and provision of farming inputs. Storage facilities are absent. This affects the fishing community along the lakeside of the township. Existing associations in Tosen are Presbyterian Church Women's Fellowship and the Tosen Youth Association.

## 2.5 Other Observations at the Sampled Villages

Other observations made at the sampled villages could be summarised as:

- a. The sampled areas are mainly rural with very low-income levels from subsistence agriculture.
- b. Most of the youth have migrated to the urban areas in search of greener pastures leaving the sick and the aged behind.
- c. Apart from the VRA, the Akosombo Textiles, Juapong Textile Companies and the Volta River Estates, there are no other major industrial establishment not even a medium nor small scale industry.
- d. There is a major problem of land tenure in the village of Adjena. This is the result of non-payment of compensation by the government to the original land owners who in turn refused the settlers access to farmlands.
- e. Villages to the west of the lake; Adjena; Gyakiti and Adumasa lack basic amenities. The road networks in these villages are very deplorable

## 2.6 Other Socio-Economic, and Environmental Findings at the Asuogyaman District

As outlined in this report, the Asuogyaman District is seriously handicapped with respect to revenue generation. The District has no modern market centres and facilities which has in turn encouraged low economic activities in the district. The revenue generation base is too narrow. However, the assembly is taking steps in the provision of market facilities that in turn will broaden the revenue base of the district.

Land acquisition, ownership and tenure problems are also prominent in the district. There are conflicts between the chiefs, the VRA and the government with respect to the rightful ownership of lands in the district. There is escalating incidence of submerged lands leading to the marginalisation of productive agricultural lands. Agricultural production in the district is dominated by low usage of modern technology and practices.

Environmental problems with respect to indiscriminate private and public land development have escalated in recent times. This has encouraged the stripping of vegetative cover in several areas. The district assembly has attempted to solve these problems through the enforcement of environmental by-laws of the district. Sanitary problems are also quite prominent. Domestic, Municipal, Human and other forms of waste are not properly disposed and treated. This situation is quite prominent in the district capital, Atimpoku because of increasing population growth in the town.

At Adjena, one of the villages covered under this socio-economic survey, the residents felt cheated by the VRA and Government of Ghana. There were bitter complaints about the lack of electrical power at Adjena in spite of its accessibility to the Akosombo dam. During the interaction with the residents of Adjena the growing dissentment and deprivation of the residents were openly expressed to the CSIR team. The road network leading to the village from the Akosombo township is far from satisfactory. Basic facilities such as good drinking water is virtually absent. A hand pump which was constructed in the village is not functioning properly. In 1996, the government erected wooden electric poles to extend electricity to Adjena but nothing else has progressed from there. In fact, the success of the CSIR technology transfer

package is likely to be jeopardised and overshadowed by the presence of the teething social and basic amenities problems at Adjena.

The following recommendations has been made with respect to the findings of the study.

### 3.1 Recommended Technology Transfer Package for the People of Adjena

Response made by the Adjena community during the survey indicated that dye technology namely poultry production, fabric and and construction production technology provided by the CSIR team were preferred by the majority of the people.

The priority of raw material availability with respect to poultry production is not considered if external sources are sought. The sources of the raw materials to produce such raw materials would be identified in line with the availability of the material resources.

*It is recommended that poultry production, fabric and and construction technology be transferred to the Adjena community.*

### 3.2 Recommended Technology Transfer Package for the People of Ardenya

Response made by the Ardenya community on the other hand indicated that they were in favour of soil farming and biogas technology. The community however opted for biogas technology.

*It is thus recommended that the technology transfer package for the Ardenya community should consist of biogas and soil farming.*

### 3.3 Recommended Technology Transfer Package for the People of Gyakiti

The town of Gyakiti lies on the west bank of the Volta Lake. Compared to the other towns, Gyakiti is far removed from the immediate banks of the lake.

## **3.0 Recommendations**

The following recommendations has been made with respect to the findings of the team:

### **3.1 Recommended Technology Transfer Package for the People of Adjena**

Responses made by the Adjena community during the survey indicated that three technologies namely poultry production, liquid soap and mushroom production technologies presented by the CSIR team were preferred by the majority of the people.

The problem of raw material availability with regard to liquid soap production can be circumvented if external sources are sought. It is suggested that nearby areas which produce such raw materials would be identified to serve as possible sources of raw material acquisition.

*It is recommended that poultry production,, liquid soap and mushroom production technologies be transferred to the Adjena community.*

### **3.2 Recommended Technology Transfer Package for the People of Adumasa.**

Responses made by the Adumasa community on the other hand indicated that they were in favour of snail farming and liquid soap technology. A few respondents however opted for mushroom production.

*It is thus recommended that the technology transfer package for the Adumasa community should consist of liquid soap and snail farming.*

### **3.3 Recommended Technology Transfer Package for the People of Gyakiti.**

The town of Gyakiti lies on the west bank of the Volta lake. Compared to Ajena and Tosen, Gyakiti is far removed from the immediate banks of the lake. Access to

farmlands is not major problem as there are large of tracts lands suitable for cassava, maize and vegetable cultivation. The survey revealed that their farming activities in no way affect the vegetation along the river banks. They therefore seem to be less interested in the CSIR technologies introduced to them. However, the women among the people interviewed expressed interest in liquid soap making.

*The team therefore recommends the transfer of liquid soap technology to them. It is also the opinion of the survey team that poultry production could be suitable for the residents.*

### **3.4 Recommended Technology Transfer Package for the People of Tosen.**

Tosen lies along the east bank of the Volta Lake. Although it is very close to the river bank, Tosen has a large tract of farmlands far beyond the immediate banks of the lake. The people are mainly subsistent farmers cultivating cassava, maize and plantation. Throughout the discussion, the people expressed interest in almost the CSIR technologies introduced to them.

*However, using the set criteria outlined in this report, the survey team recommends poultry farming and liquid soap making.*

### **3.5 Policy Recommendations for the Asuogyaman District Assembly.**

The following policy recommendations with respect to the CSIR technology transfer package has been presented for consideration by the Asuogyaman District Assembly:

1. The district assembly should assist the residents of the sample villages with the initial investment required to start the identified suitable technology for the villages. It is most likely that these technologies will not diffuse widely because of the low income of the residents. *A policy of the provision of at least 50 per cent of the initial capital provision must be made considered by the Asuogyaman District Assembly.*



2. The Asuogyaman District Assembly should consider requesting the CSIR to extend its technology transfer package and programme to as many villages in the district as possible. The district assembly should formally request the VRA for funds to support the programme. Donor agencies and foreign embassies could also be approached. Initially, the assembly should consider making funds immediately available from its sources to ensure the continuity and extension of the CSIR technology transfer package and programme to at least 20 villages in 1998. *Therefore, a policy of immediate extension of the CSIR package and programme is recommended.*
3. The Asuogyaman District Assembly stands to gain a lot by way of expanded revenue collection from a successful technology transfer and increased income generation in the district through the CSIR technology transfer package. *The district assembly should pursue a policy of expansion of revenue collection through the construction of markets, public places of convenience, amusement centres, etc. that could be tolled to broaden the revenue base of the district.*
4. The Asuogyaman District Assembly should immediately consult the district agricultural extension service director for the inclusion of extension officers in the training component of the CSIR technology transfer package. *This policy of inclusion of the extension officers in the training component of the CSIR technology transfer package is recommended because the extension officers by virtue of their constant interaction and proximity to the residents could serve as first points of contact and reference without resorting to the bringing down again of the CSIR trainers.*
5. The Asuogyaman District Assembly would have to play a role in the marketing of products from the transferred technologies from the CSIR. *It is therefore recommended that a marketing assistance policy be pursued by the district assembly.*

### **3.6 Policy Recommendations for the Ministry of Environment, Science and Technology (MEST).**

The following policy recommendations for the MEST has been proposed:

1. *MEST should pursue an extension policy for CSIR technology transfer package/programme to other administrative districts of the country.* This policy will boost up the current commercialisation drive of the CSIR. The era where research findings are left on shelves are over.
2. *MEST should facilitate and assist the CSIR and other district assemblies to attract and secure financial support for the extension of the technology transfer package recommended in (1) above.*
3. The low level of the Volta Lake can not be attributed to the Asuogyaman district alone. *Therefore, the crash programme being pursued by MEST should be extended to other administrative districts bordering the Volta Lake. Priority should be given to districts in the northern parts of the country.*
4. *MEST should bring to the attention of the cabinet the plight of the people of Adjena and surrounding with regard to the unfair treatment in connection with the construction of the dam. As soon as possible these people should be provided with good drinking water, connection to the national grid and good road network.* This is very necessary and dear to the residents of Adjena and surrounding areas. The crash programme could be a failure if this issue is down played.

### **3.7 Recommendations for the CSIR.**

The following recommendations are made for the CSIR:

- The CSIR should establish a joint consultative committee with the Asuogyaman District Assembly and Volta River Authority (VRA) to critically study the socio-economic problems in the area and come out with the appropriate recommendations.
- The CSIR should initiate discussions the with VRA on the establishment of a Greenbelt along the banks of the Volta Lake.
- The CSIR should identity specific viable projects for the District and use that as a test case for its Commercialization programme.
- To facilitate and ensure the success of the training programme for the technology transfer to the residents of the sampled villages, *it is strongly recommended that 2 members of the CSIR Socio-Economic Survey and Studies team, preferably a social, environmental and policy researcher in addition to marketing officer be*

*included and participate in the training programme as part of the trainers' team. Their inclusion will be justified by their expected role to study the entire training processes and address social, environmental, economic, policy and marketing issues that will arise in the course of further interactions during the training sessions in the sampled villages.*

### 3.8 Recommendations for the Training Programme

The next phase of the CSIR technology transfer is the 5-day training programme. Table 2 gives a summary of the recommendations for the training programme:

**Table 2 : Recommendations for the 5-Day Training Programme.**

SAMPLE VILLAGE	TECHNOLOGY PACKAGE	COMPOSITION OF TRAINING TEAM
ADJENA	<ul style="list-style-type: none"> <li>• POULTRY PRODUCTION</li> <li>• MUSHROOM PRODUCTION</li> <li>• LIQUID SOAP PRODUCTION</li> </ul>	<ul style="list-style-type: none"> <li>• 2 A.R.I OFFICERS</li> <li>• 2 F.R.I OFFICERS</li> <li>• 2 I.I.R OFFICERS</li> <li>• 2 MEMBERS OF SOCIO-ECONOMIC TEAM</li> </ul>
ADUMASA	<ul style="list-style-type: none"> <li>• SNAIL FARMING</li> <li>• LIQUID SOAP PRODUCTION</li> </ul>	<ul style="list-style-type: none"> <li>• 2 F.R.I OFFICERS</li> <li>• 2 I.I.R OFFICERS</li> <li>• 2 MEMBERS OF SOCIO-ECONOMIC TEAM</li> </ul>
GYAKTITI	<ul style="list-style-type: none"> <li>• POULTRY PRODUCTION</li> <li>• LIQUID SOAP PRODUCTION</li> </ul>	<ul style="list-style-type: none"> <li>• 2 A.R.I OFFICERS</li> <li>• 2 I.I.R OFFICERS</li> <li>• 2 MEMBERS OF SOCIO-ECONOMIC TEAM</li> </ul>
TOSEN	<ul style="list-style-type: none"> <li>• POULTRY FARMING</li> <li>• LIQUID SOAP MAKING</li> </ul>	<ul style="list-style-type: none"> <li>• 2 A.R.I OFFICERS</li> <li>• 2 I.I.R OFFICERS</li> <li>• 2 MEMBERS OF SOCIO-ECONOMIC TEAM</li> </ul>

Notes: A.R.I: Animal Research Institute      I.I.R : Institute for Industrial Research  
F.R.I: Food Research Institute

# Food Research Institute



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