NATURAL RESOURCES SYSTEMS PROGRAMME

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"Bridging Knowledge Gaps between Soils Research and Dissemination in Ghana" (DFID Project R7516)

Farmer Field School evaluation: part two

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FARMER FIELD SCHOOL EVALUATION: PART TWO

BACKGOUND

Despite voluminous literature elaborating on promising soil fertility measures, the implementation of the measures has encountered many problems. One of the major obstacles confronting sustainable and successful implementation is the farmers' unwillingness to invest in soil fertility intervention.

Past experiences from many projects have shown that the adoption of new (introduced) technology by farmers often ends when the project leaves the area or terminates. It is therefore necessary that current adoption status is evaluated and validated adequately. The evaluation and validation of technologies should be conducted at farm scale.

Furthermore, success of transferring a new innovation or technology is evaluated by its acceptance and sustained adoption by the target clientele. In general, farmers do not do things by trail and error. In relating to new interventions, they complement the information they receive with their existing knowledge and past experiences (Bonifacio, 1994).

PURPOSE:

The purpose of the continue evaluation is to investigate the levels of adoption of the soil fertility intervention disseminated by GOAN through the Farmer Field School approach, its effectiveness, adaptability and dissemination penetration.

Studies results evaluating farmers' perceptions of soil fertility carried out last year pointed to the complex nature of the adoption process and the many interrelated factors affecting full adoption of the soil fertility interventions by the targeted farmers at both Offinso and Duase

Due to the short period between the completion of the school and general practices, it was however not too clear to conclude from the findings that the farmers have adopted the technologies wholly. This however prompted the needs for continuous evaluation to ascertain the levels of adoption of the soil fertility interventions.

PARTICIPATORY EVALUATION

Involving farmers as active participants in the evaluation of proposed technological innovation can have a number of benefits. It provides, firstly, an opportunity for researchers/extensionists and farmers to exchange their ideas and judgements about the potentials, the advantages, and disadvantages of a new technology. It allows, secondly, researchers/extensionists to learn more about the indigenous technical knowledge of farmers to assess the usefulness of a new farming practice. Finally, it provides researchers/extensionists with direct insight into farmers' priority setting, and better understanding of on what basis and for what reasons they choose among different technology options.

METHODS USED

The methods used for the continuous evaluation exercise and knowledge flow analysis is semi-structured interviews and individual farmer field visits.

FIELD STUDIES/ OBSERVATION:

The reporting format use cover all activities engaged in the field, cropping systems, number of farmers contacted and interviewed, technologies adopted, and technology penetration/dissemination, limitations to adoption etc.

Crops/Cropping systems: The farming system was characterised by mixed cropping and major crops include plantain, cassava, yam, cocoyam, maize, and vegetables such as pepper, tomato, okra, cabbage and garden egg among others.

NO. OF FARMERS VISITED

During the evaluation, 18 and 20 farmers' field were visited at Duase and Offinso sites respectively. Duase initially has 28 farmers being trained and Offinso 29. This constituted 38 farmers engaged in farming activities this season.

TECHNOLOGIES ADOPTED BY THE FARMERS

The 18 farmers field visited at Duase shows the continuous use of poultry manure, household wastes, mulching, neem extract for yam, plantain, coco yam, maize and vegetables such as pepper, garden eggs and some indigenous leafy vegetables.

It was observed that two farmers have prepared compost to be used and 9 other farmers applied compost on their farms after the finish of the FFS.

At Offinso, major technology options adopted by the farmers are mainly poultry manure, and neem extract with the least of compost, and manure tea. These were applied mainly on vegetables with farmer applying poultry manure on maize. Only a farmer has prepared two barrels of manure tea sited on his farm and covered for application on his crops. The production is fully under irrigation.

Unlike Duase, the dominance of applying the technologies on food crops other than vegetables at Offinso is less. The farmers at Offinso have chosen/selected poultry manure and neem extracts as the most useful technology options adaptable. These are being applied on the vegetables.

The adoption of the technology by the farmers at Duase constitutes 64.3% (18 of 28) while that of Offinso is 69.0% (20 of 29). In real expression, adoption of the technologies at Duase is better than Offinso since application was not mainly meant for vegetables but also involved food crops and despite land acquisition as a constraint, they still made the effort to invest energies and time to the adoption of the technologies as against Offinso.

This implies that 35.7% of the farmers are faced with a problem of land acquisition as a result of rapid urbanisation and demands and sales of land in the area.

Each of the FFS participants has cultivated at least 3-5 farms after the close of the field school.

ADOPTION INDICATORS

- The farmers at Duase have resort to apply the technologies to food crops and apply them on all the farms. (A shift from use on vegetables)
- Farmers (2) at Offinso resort to the use of pipe borne water for irrigating their carrot, pepper, and cabbage and okra farms.
- Farmers' acceptance and recommendations for more FFS to be ran in other areas.
- Farmers' willingness to acquire land to expand their production unit area.
- Increasing awareness of the usefulness of the field school and high number of other farmers been trained using at least 2 or more of the technologies (poultry manure/compost, neem extracts).
- Acceptance/adoption of the technologies such as non-burning of farm residues, mulching and the use of poultry manure by an Assembly Member (Offinso District Assembly) for her citrus, and oil palm as a result of her regular visits during the conduct of the field school.
- A further more FFS being facilitated by Mr. Opoku Antoh (an FFS graduand) at Asempaneye, a farming community 30 miles away from Offinso, training 31 farmers on integrated pest management and soil fertility management approaches as a means of disseminating organic farming practices.
- Farmers' become convinced about the continuous fruiting of their pepper and garden egg plants attributed to the effects of manure and compost on the soil fertility.

TECHNOLOGY PENETRATION/KNOWLEDGE FLOW ANALYSIS:

Yaa Foriwah at Duase has been able to spread the technology by teaching farmers at Abuakwa and Kentekrono, communities outside Duasi who are also using neem extracts and poultry manure on vegetable crops production.

She is also now a temporal residence at Abuakwa and was invited to join the District Award Winners Farmers Association (all the districts award winners in Ashanti region) who meets every month to share ideas and experience. She said the idea about organic farming was not known to the members and she had the singular opportunity to teach members the ways poultry manure was to be used, composting and their advantages to the soil and the use of neem extracts as a botanical insecticides as alternative to chemical pesticides and reduced cost of production.

She said ever since then every meeting she has the chance to train members on organic soil management and also demonstrate the practices to members on the field.

The use of poultry manure was also introduced to 6 people in Dorma-Berekum in the Brong Ahafo region including the daughter and the husband of Comfort Adomaa who own a poultry farm. They often disposed of the manure, until she told them to use it as soil nutrient. According to her, her second visit to them resulted in testimonies on how their plantain was growing with heavy fingers after applying the poultry manure to them.

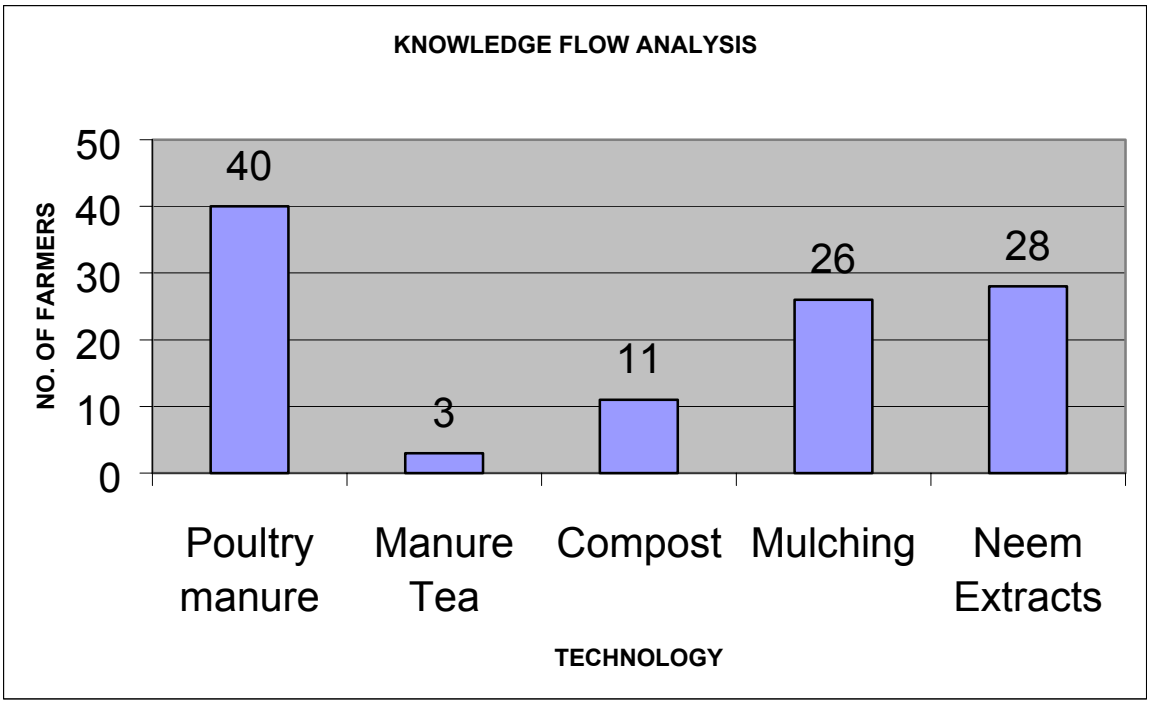
About ten (10) more other farmers were taught to make and use compost; poultry manure and neem extract which they were using on their farms. (Field visits revealed).

This figures is quite different from Offinso where about 41 farmers within were also taught how to use manure and neem extracts for soil improvement and insects control and 31 farmers were also trained by Mr. Opoku Antoh; (Offinso FFS participant/Facilitator) at Asempaneye farmer field school which ended in March this year. This constitutes about 72 farmers gaining knowledge about soil fertility inputs and integrated pest management approaches.

Note: The technology penetration among other farmers is participatory on-farm demonstration led by the graduands on their farms or informal contacts.

Data collected on knowledge flow analysis with respect to Technology adoption options

Technology	**Poultry manure**	**Manure Tea**	**Compost**	**Mulching**	**Neem Extracts**
No. Of farmers	40	3	11	26	28



Note: Mulching has gained adoption than compost because the technology is now being used on food crops and the complexity with which compost preparation is perceived by the farmers.

FARMERS OPINION ABOUT THE FARMER FIELD SCHOOL

There was fair representation and expressions of opinions about the farmer field school by the farmers interviewed at both sites in relation to how it has help in their production systems and livelihoods.

Principal among others are as follows:

a. The farmers felt that more of the FFS should be organised to train other farmers on the benefits of using organic inputs for the restoration of soil fertility and productivity.
b. How the use of these inputs and sustainable alternative botanical pesticides contribute to reduce production cost, increased productivity and reduced impacts of pesticides hazards.
c. We also believe that field training is the best ways of bringing the evidence/results of new innovations to the acceptance of most farmers. This, according to them avoids uncertainties and risk with which new technologies are embraced.
d. The farmer field school helps us to be able to maintain our cooperative and works for the mutual benefits of members.
e. We also learn to study each other during the period of the school and build up our experiences in participatory decision-making processes.
f. It actual helps to know the potential/prospective farmers to contact for immediate problems and action.

FACTORS AFFECTING RAPID ADOPTION

There are several factors that were found to be constraining farmers to adopting the several technological intervention options.

These are briefly explained below:

Land Tenure: It was realised from the field visits that some of the farms being cropped were small as due to tenure and use of land for agricultural activities. Land leased or purchased is only meant for seasonal crops such as vegetables and are not allowed for perennial/permanent crops production. Investments in the land for long lasting soil fertility and productivity have thus become hindered.

Perceived Complexity and difficulties of some of the technologies: Farmers perceived some of the technological options to be difficult and also requiring high levels of expertise to ensure success in adoption. Also the time taking for a technological intervention to be useful in farming systems. Compost is one of these technologies that the farmers felt it is difficult to prepare (digging the pit) and it also takes time to be ready for use. They say even though, it is very good in improving the soil; complexity and difficulties are factors discouraging adoption. Hence adopt manure because it is easier to use and obtain.

Population Pressure: High population growth resulting in rapid urbanisation is also observed as a limiting factor to adoption of technical interventions. This situation is particularly true with farmers at Duase whose livelihoods is being threatened by rampant sales of land for building activities rendering about 35.7% of the trained farmers inability to have access to land for agricultural activities. Most of their farmlands are being taking by building projects.

Lack of Credit facilities: Farmers are of the view that efforts can be made to effectively adopt the innovations if there are guaranteed financial assistance to acquire land, equipments and other inputs. This is obviating their ability to increase production and adopt the interventions.

Lack of good marketing systems: The farmers also believe that they felt cheated if efforts invested in the intervention do not yield the right dividend. They said as they practice and produce organic crops, their products do not attract premium prices as they at the same time sell them as the conventional products. They complained that lack of good marking systems discourage them from adopting a particular intervention.

Irregular follow-up visits: Farmers always need quick solution to technical problems and feel neglected when there is no immediate help for them to solving the problem. Lack of regular visits was seen as constraints to adoption of technological interventions.

All things factors were also noticed to be a hindrance to the spread of the technologies.

Timing of the evaluation

The field studies for the evaluation cover 20 days for the farmers at both Offinso and Duase.

CONCLUSION

Notwithstanding these constraints, the adoption and knowledge flow/penetration of the interventions is very remarkable as more farmers are also aspiring to promote the interventions in other district and regions where they can have access to land. The farmers' quest for the expansion of the FFS to other areas is an indicative of its participative and step-by-step demonstration of the technologies on the fields, which is also capable for participatory and rapid dissemination of technical interventions.

It can be infer from the findings that dissemination is more rapid than adoption. Therefore, soil fertility research inputs/results to gain rapid adoption after the FFS approach, or any other participatory approaches, monitoring and evaluations should be useful tools to facilitate adoption and exchange of ideas amongst farmers, research and extension.