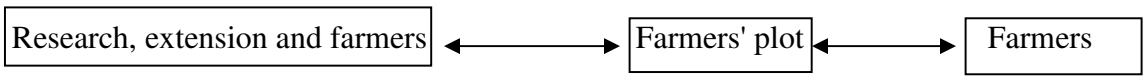
The interdependence of research, agricultural extension services and farmers

Summary

Ethiopia is potentially agriculturally rich, although some are less optimistic. To feed its growing population and to minimize its current food deficit, its bounty should be utilized. 85% of the population are subsistence farmers, and the average land holding is 1.5 hectare (CSA,1995). 45% of the GDP comes from agriculture. However, efforts to increase agricultural production have relied on imported research and extension models that have not been as productive as hoped. The objective of the study was to analyze the interdependence between researchers, extension services and farmers, examine constraints and suggest possible remedies. Constraints could be summarized as: economic, socio-cultural, technical know-how, physical and political. The study analyzed past and current historical dimensions, reviewed farmers' participation in research and extension activities, and considered the value of available local knowledge. Primary and secondary data were collected, a survey was performed and results analyzed. Alternative methods that fit the local conditions are discussed. Possible solutions are proposed to strengthen the transfer of knowledge between all three parties through adequate participation, teaching and training methods. The study suggests that existing agricultural research should change from a technology-oriented to farmer-centered approach. Consequently farmers would not be reluctant at adopting new agricultural packages. The proposed agricultural extension linkage would empower, train and ensure the farmers' involvement, "growing from the native soil."



Introduction

Fore sure agriculture is the mainstay of Ethiopia's economy; 45% of the GDP comes from Agriculture (CSA, 1995). Up until the 1950's, Ethiopia was a food exporter to the Middle East. However, today 85% of farmers are subsistent despite the massive aid offered by foreign-sponsored agricultural projects. The imported research and extension models have not been as effective as they were in their countries of origin; Hunger, starvation and displacement of families has been the result. Farmers are discouraged and many have refused to comply with or participate in the activities of researchers and extension officers, even if the research findings are useful.

Three Models of interdependence between the research, the extension and farmers:

1. Conventional Research – Managed Project:

Research ⟶ Extension ⟶ Farmers

- The dominant model implement by governments since the 1950's, with the research budget depending on major funding from large bi-lateral and multi-lateral organizations.
- Aimed at the transfer of technical knowledge, it is research centered, and farmers are merely passive listeners and adopters.
- An economic advantage of research to the farmers seems not carefully analyzed.
- Research recommendations were not farmers' priorities, and were difficult to comprehend and implement.
- Communication is vertical, one way, from top-down and transmitted from research to extension officers, and then from extension officers to farmers through lectures.

2. Extension – Managed Project:

Research, Extension ⟷ Farmers' plot ⟷ Farmers

- Uses feedback and two-way communication between sets of parties, in a horizontal structure. Researchers train the extension officers, who then teach the farmers and take questions back to the researchers.
- A multi-location verification demonstrative trail is done in the farmers' fields, with more co-operations between extension officers and the farmers.
- Some government-sponsored programs are adopting this model.

3. Farmer-Managed Project:

(Researcher, Extension, Farmers) ⟷ Farmers' plot ⟷ Farmers

- In this method, researchers, extension officers and farmers form an ad hoc committee that identifies plans and implements research and controls the dissemination of information.

- Farmers become stakeholders and empowered partners, not just recipients. Farmers adopt the model because they have the resources to implement in and invest in it. The model recognizes that the three key players have similar objectives: to increase crop yield.

- This model is currently favored by some organizations, although non has yet invested the time to completely test the model or develop the long-term relationships necessary for its success.

On farm demonstration

Group effort is key:

- The indigenous knowledge of farmers is untapped; centuries of trial and error have taught them a lot and it is valued.
- Farmers are strategic consummate of pragmatism, hence their practice is incorporated into research.
- Farmers' empowerment enhances the validity of the research, increases the flow of information and accelerates the rate of adoption of new innovations. This is cost effective and farmer-centered.
- The inter-exchange/sharing of information and interaction is attained through group work, which involves all parties in identification, formulation, implementation, monitoring and evaluation of projects.
- Where the illiteracy rate is high, informal group teaching or training through discussion supported by demonstration has been found effective. Farmers could hear, see, touch, smell and understand what is being demonstrated and can actively take-part in the process. There is immediate feedback. Learning is accomplished by doing. Theory and practice are parallel, enabling farmers to retain what they did and remember what they have been taught. The flow of information is horizontal and it is semi structured.

Main Agricultural Production Constraints:

- Challenging natural resources and environment
- Limited institutions
- Limited technical know-how – low literacy rate
- Inadequate human resources and brain drain
- Very limited infrastructure
- Financial- dependency on expensive foreign aide
- Land tenure system
- Frequent change of government policy
- Traditional farming tools

Ethiopian farming tools are traditional from the biblical times

Conclusion

- As the conventional attempt of researchers to solve agricultural production constraints only through technical means has not succeeded as hoped. No amount of pressure from the government or non-profit organizations will convince or influence farmers to adopt new innovations that are not economic. Farmers adopt a new technology when they find it relevant, have valuable input into the process, and have adequate knowledge and resources to implement.
- Farmer-managed research projects is the proposed remedy that enhances the flow of information and interaction among researchers, extension officers and farmers, through a common plan that brings all parties to act together for the common good.
- This model allows farmers to be trained in new skills. Researchers take farmers as partners in technology and curriculum development.
- Other remedies involve upgrading the technical capacity of researchers and extension officers so that they can communicate with outside research centers as well as farmers.
- Broadly speaking, to attain higher levels of farmers' participation in viable agricultural research projects, farmers should be properly educated and trained. Sustained adult education and on-the-job training for researchers and extension officers have proved to strengthen the flow of information and the working interrelationships among the three parties, thus fostering respect and trust between them.