1. INTRODUCTION

Queries are often raised by people concerned on the requirement of incentives for watershed conservation work. The typical questions are somewhat as follows:

1) Why should government give incentives to the farmers who practice conservation work on their own farms?

2) What type of incentives should be given if government agrees in principle?

3) Can developing countries afford to provide incentives in a nation-wide program?

In this session, we try to discuss and answer the above queries.

2. INCENTIVES NEEDS

The justification for giving incentives to farmers in the upstream watersheds who adopt conservation measures can be briefly stated as follows:

- They are usually too poor to make any initial investment. Most farmers are subsistence type and they have no capitals to make investment. Some type of conservation work can be quite expensive.

- Even in the form of contributing labor, the work can be a heavy burden to farmers. Otherwise, they could earn some off-farm wages instead.

- Land taken out of production and used for conservation practices needs some kind of compensation. When some conservation work, such as terracing, is being implemented the land can not produce any crops for some months or a whole season.

- The time span between investment and returns could be very long such as in reforestation. The exposure of subsoils in terracing may cause lower production unless extra input for fertility building is practiced which means extra effort, time or money.

- Much conservation work offers off-site protection which the downstream communities, or the nation as a whole, will receive benefits. It is unfair to ask the upstream farmers to bear all the cost; so there is a need for cost sharing systems.

There are many types of incentives. To decide the proper type or types depends on each country's policy, resources, as well as the urgency and importance of the watershed work.

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3. CATEGORIES OF INCENTIVES

Incentives can be classified to many categories as follows (FAO, 1980):

a. Direct: Resources placed directly at the disposal of the farmers for the performance of a given task on their farms. These resources can be in the form of cash according to the volume of work performed; or on the basis of a day's wages; in kind or in the form of food per day of work or in the form of work implements or production inputs.

b. Indirect: These are incentives given to the farmers in accordance with a given economic policy, e.g. free technical assistance, price support, tax reductions or exemptions, etc.

c. According to their effect in time:
   - Short term
   - Medium term
   - Long term

d. According to its effect upon socio-economic development:
   - Subsistence
   - Support
   - Productive investment
   - Capitalization

e. According to the transfer of funds:
   - From the government to the beneficiary
   - From the government to community organization
   - From the government to a revolving fund

f. According to the form of reimbursement:
   - Non-recoverable
   - Investment recoverable by the government
   - Revolving community funds

For details of direct incentives and indirect incentives, please see Fig. 1. From it and from the above list we know that many types can be taken into consideration for final selection.

4. A DISCUSSION ON VARIOUS TYPES OF INCENTIVES

Before making any decision, we need further comprehend the pros and cons of some major types of incentive.
Figure 1. CATEGORIES OF INCENTIVES FOR WATERSHED CONSERVATION WORK
(Source: Botero, 1986 (FAO))
4.1 Cash Subsidies

Many countries use cash to subsidize the conservation work accomplished by farmers. A high percentage of the total cost is designated as government contribution and the remaining is shared by the farmers. In such case, a standard cost should be set up for various types of work under different conditions. In some other countries, partial wage is given according to the mandays spent on the work. Cash subsidy has its advantages and disadvantages. Farmers generally prefer cash then other material or "in kind" incentives. On the government side, it is much easier to handle cash than other things. However, there are risks that cash might be ill used for purposes other than for investing continuously in conservation and production.

4.2 Credits

Some countries have low interest and long grace-period loans for reforestation and land improvement practices. For many reasons, small farmers mostly fail to take advantage of such credit facilities. One is the title of the land which is required as collateral for the financial institution. Another is that the small farmers have no experience at handling their farms as enterprises which need to borrow and repay all the time. Many loans have never been paid back and were considered a government handout. On the other hand, defaulting makes quite a loss for many such financial institutions. Unless the central bank can cover such risks, credit institutions soon lose their interest in this kind of business.

4.3 Revolving Funds

This is also a credit scheme but it is usually established without interest and handled by a watershed agency or a community concerned with specific items of work within a confined area or a watershed. The agency or the community sometimes needs to set-up a specific unit to handle the work if many farmers or activities are involved. The problem of defaulting repayments can still be serious for small subsistence farmers as the case shown in the UNDP/FAO watershed project in Northern Thailand.

4.4 Food for Work

Food rations, instead of cash, are given to farmers or participants of a watershed conservation program to complement the diet of their families for work performed in their farms and in the community. Food for work is particularly suited for areas with seasonal unemployment and chronic under-employment. The World Food Program and PL 480 Program of the U.S.A. have done many successful works in developing countries with food incentives. For food programs to be successful, the recipient government needs to commit themselves to properly and promptly handling the incoming food including storage, delivery, and fair distribution. In many instances, the program failed because of poor administration and/or selection of improper kinds of food. Nevertheless, these kind of food programs should be viewed as catalysts or temporary assistance, not as a permanent form of additional income. The nation, as a whole, should not depend on such food program for feeding their rural population indefinitely.

4.5 Supply of Labors
Government sometimes directly hires experienced laborers to supplement or speed up watershed conservation work on private farms or public lands. If it is for work to be completed in season, for community work, or for work requiring higher technical inputs, direct supply of labors (especially experienced labors) is justified. There are some drawbacks of this type of incentive. Farmers may depend too much of the government and not to learn seriously the work they need to perform in the future. Also, experience shows that once the work is done by government labors, farmers will always depend on government even for future maintenance work.

4.6 Supply of Farm Inputs

The supply of farm inputs such as improved seeds, seedlings, farming tools, fertilizers, animal feed and others can be good incentives for farmers who participate in the program. Such inputs usually cost farmers a great deal and to supply them freely or by reduced cost will be a major incentive to the farming community. To do this the government needs not only sufficient funds but also the capability of purchasing, transportation, and storage. The advantage is that when the land is prepared (terraced), it can be readily planted without delay. If government resources are limited, arranging for farm inputs to be available in the nearby locality will also help farmers considerably since in many rural areas such inputs are frequently short or not available.

4.7 Providing Infrastructures

This category includes addition and improvement of roads, small irrigation, domestic water supplies, storage and marketing places, recreation centers, houses, schools, and other community facilities. Usually, some of these activities are included in an integrated watershed program. The important thing is to find out what are really needed and their priorities from the local community and what the government can really afford. Many countries found that roads and water were the most desirable items and including them in the program had greatly stimulated farmers' participation in the program.

4.8 Tax Reductions or Exemptions

Tax reductions or exemptions have been used in several countries for reforestation and conservation farming. Watershed agencies need to obtain agreement from the tax authority of the country. The problems are that it contradicts fair tax principle unless a strong case can be built to justify such needs. Small farmers usually pay little or no tax and reduction or exemption does not mean much to the comparative high investment of watershed conservation work.

4.9 Price Support and Control

For watershed conservation programs emphasizing on crop production, price support or guarantee is very important. The ultimate goals of such programs are to increase farmers income and maintain the sustainability of the land. If production or income is insufficient, farmers will cultivate more lands, in the form of shifting cultivation, for example, to make up their needs. On the other hand, if crops are over produced resulting in the fall of local price, farmers will also be hurt. Price support is sometimes necessary but it can be a complex matter. When planning for price support, it should not be planned in isolation. It should study government policy and plan
with marketing experts and economists both at the local and national levels. Ideally, if there exists a national policy for supporting certain crops and those crops can be produced in the watershed, then it can be more conveniently used as a major incentive. Another aspect is price control for farm inputs. This may also encounter difficulties under free market conditions.

4.10 Land Tenure Security

The importance of land tenure to a watershed conservation program cannot be over emphasized. Farmers will not adopt conservation or land improvement practices if the lands do not belong to them, or they have no rights to use the lands. Therefore, security of land tenure can be major incentives for many small farmers in a watershed. For instance, many of the national forests in the hilly watersheds of developing countries were demarcated decades ago when the population pressure was light and the knowledge of scientific land classification was incomplete. Numerous farmers are now cultivating or squatting these lands causing a deadlock to land management authority and also a continuity of severe erosion. In some countries, the forest lands under cultivation or close to the villages, are reclassified with practical criteria. If the land is suitable for conservation practices and cultivable, the land is leased or sold to the present cultivator after he or she completed the required or prescribed conservation treatment. If the land is suitable only for forest, it should be reforested by the squatters with government support and then leased or sold afterwards. This kind of program has surely promoted proper land use, alleviated social problems, minimized administration headaches, and reduced soil erosion. To do all of this, strong government policy support is a necessity. For some other watersheds, to arrange rental agreements between present cultivator and land owner, especially those absentee owners in the cities, can be a substantial incentives for those farmers who will adopt land improvement practices.

4.11 Technical Assistance

Technical assistance, including farmers' training and education, is an essential and well identified incentive for promoting watershed conservation work. As mentioned in the previous lectures, there should be sufficient groups of technical personnel in the watershed (or nearby) to assist the farmers when and where needed. Also important is that the type of assistance is usually beyond merely information transfer. Planning with farmers, design, construction supervision, and follow-up work such as maintenance inspection, cropping, and marketing should all be included. Without intensive assistance, farmers will not benefit very much.

4.12 Incentives Combined as a Package

Incentives are usually rendered to the farmers in a package. For instance, many countries put technical assistance plus food and some financial aid as one package. Each country or each program should decide its own best package according to resources available and actual needs.

5. INCENTIVE STRATEGIES FOR A NATIONAL PROGRAM

Many developing countries do have limited resources and financial constraints for providing incentives for watershed conservation especially when the program is expended nationwide. Yet, without proper incentives, the program can not grow as planned. To break this
deadlock, some strategy should be developed. The following are some recommendations for formulating necessary strategies:

- Classify the nation's watersheds into priorities for treatment or development. The principles and technical aspects of classification have been discussed previously. Incentives, like other investments, can be concentrated on these priority watersheds.

- Treat incentives as a stimulate package for the initial period of any such program at a new watershed or area. The exact length of the period should be determined according to the local needs and make it known to the farmers. Farmers should be told that they cannot depend on incentives forever.

- Incentives are given according to the economic status of the farmers. For instance, a distinguish between small or subsistence farms, medium sized farms and large farms should be first made according to some suitable criteria. Then a policy guideline should be determined for what type or package of incentives will be given to what type of farm. For instance, for large farms only technical assistance will be given while food or full subsidies, and technical assistance will be given to small farms. The medium farm will receive technical assistance and some subsidies. The appropriate standard and details needs to be worked out properly.

- For obtaining or increasing budgetary funds for incentives, previous discussion on earmarking a certain percent of nation’s major developing project cost, i.e. reservoirs, roads or others for watershed protection can be a good source for consideration. This is logic and not merely a pocket switch approach because most such investment has additional loan and grant from foreign inputs.

- Cost sharing systems should be practiced only on private farms. Work on public or common lands such as stream protection, public road stabilization, and forest reserves should be budgeted by responsible agencies and not be considered as funds for farmers incentives.

- Last, but not least important, is what many developing countries have been doing: asking for international aids in food or in funding. These projects can give a substantial help especially at the initial phase of the national program.

6. FINAL REMARKS AND GUIDELINES

The following remarks and guidelines are based on experience gathered from many developing countries by FAO and others:

- Incentives should be seriously considered in watershed conservation programs for upland farmers and communities. The types of incentives given depend on actual needs and resources availability.

- Incentives should be made known to all farmers and the watershed communities that they are available for all people who voluntarily participate the program. They are not
free gifts or government relief, and the recipient has the responsibility to implement the planned work.

- Incentives in cash or in kind should be viewed as catalytic role and should therefore be employed in the initial period of any program until the farmer and community can acquire a certain degree of self-reliance or sustainability. The proper period depends upon the programmed work; it can be three to five years, for example.

- Programming application of incentives on the basis of conservation farm plans will ensure that the farmer will timely receive the required inputs to improve production through conservation, as the planned targets are reached.

- Fair cost sharing rates should be established, considering the extent to which the conservation measures will have on beneficial extra-farm effects. The rates can vary from watershed to watershed, according to their importance and local needs.

- Subsistence farmers in marginal conditions might make better use of incentives packages constituted of food, tools, agricultural inputs and others in kind.

- Effective supervision of work implementation and smooth flow of incentives are essential to ensure success of the planned work on individual farms as well as in the targeted program.

- For revolving funds or credits, the recovery of the funds for re-investing to other areas or watersheds cannot be short termed because the returns to conservation work requires a long period.

- Stability of land tenure, appropriate marketing channels, price supporting, and organized grassroot groups are some of the vital prerequisites to ensure success of a conservation incentive program.

REFERENCES


