

Joint efforts in farming

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I. — INTRODUCTION

Value Premises

The basic values underlying the views expressed in this paper are as follows :

Incomes and Levels of Living of the Population Should be Increased

Efforts are needed to increase the per capita incomes of the people in both the farm and non-farm population.

a. *Farm Population.*

Incomes (and consequently levels of living) of the farm population may be increased by increasing the margin between total returns and total costs. Without increasing prices to consumers this may be achieved by increasing the yield of the existing resources or by reducing the cost of producing each unit of product. Either way would increase incomes of the farm population.

b. *Non-farm Population.*

If the cost of producing each unit of farm product is reduced there is scope for reducing the price of food, fiber and raw materials used by non-farm people. If prices of these products are reduced to the non-farm population the net effect will be one of increasing incomes — our first value premise.

Productivity of scarce Resources Should be Increased

Not unrelated to our first value premise is our second which is calling for the combination and use of man's scarce resources in the way that will give maximum benefit to him now and in the future. This may be viewed from both the public and the private points of view.

a. *Public Resources.*

In underdeveloped areas of the world the public sector is having great demands placed on its material and human resources in meeting the demands for economic development. Since these resources are scarce we are anxious to adopt programs of development which will give the maximum benefit to the people.

b. *Private Resources.*

At the micro-agricultural economic level the individual farmer is viewing his

package of limited resources in the same way. In an underdeveloped agriculture the farmers are constantly in search of better ways to combine their limited land, water, capital and knowledge so as to attain some of the economies of scale and specialization which will result in increased production and incomes.

Thus we state as our second value premise that of increased productivity of scarce resources.

Social, Economic and Political Equality of People Should be Achieved

Increased mean per capita incomes and productivity of resources are necessary but not sufficient values. The value which is needed to make this set of value premises sufficient is that of social, economic and political equality. Thus this paper will offer suggestions for strengthening the social, economic and political positions of all farm people — our third value premise.

Range of Possibilities

Farming is carried on in different ways ranging from a purely individualistic system of farming at one extreme to a completely institutionalized system of group farming at the other extreme. Examples of the latter are the Ejidos of Mexico, the state and collective farms of the U.S.S.R., the Kibbutzs and Moshavs of Israel, the Gezira Scheme of Sudan, the Vicos Project of Peru and the newly instituted farm corporations of Iran.

Between the two extremes of individual farming and institutionalized group farming is a wide range of possibilities of joint efforts in farming. It is this range of possibilities for joint efforts in farming which is the subject of this paper. Based on the value premises on which this paper is based, examples of joint efforts in farming are discussed in the following section.

I. — EXAMPLES OF JOINT EFFORTS IN FARMING

The following examples of joint efforts in farming are divided into those which tend to help reduce the costs of produ-

cing a unit of product and those which help to reduce some of the risks of farming.

Reducing Unit Costs

Shortage of resources, lumpiness of some farm inputs and seasonality of farm production are some of the reasons that farmers may increase the quantity and productivity of the resources at their disposal by joining together with another farmer (or other farmers) in the use of supplies, equipment and services, labor, land and natural resources, technology and marketing services.

Equipment, Supplies and Services

Usually farm supplies may be purchased at a lower price per unit if they are purchased in larger quantities. If two farmers are in need of the same kind of seed or fertilizer, they may succeed in getting a lower rate if they pool their two orders into one larger order.

The joint use of farm machinery also lends itself nicely to joint arrangements. One farmer may buy a tractor and rent the use of the tractor to his neighbor. Both will benefit. The tractor owner has made fuller use of his investment, the other has avoided the need for making the investment in the full price of a tractor.

Another form of cost-reducing exchange of farm equipment is the example of two farmers engaged in production of the same product. One may invest in one piece of equipment and the other farmer in a different piece. For example, in hay production, one farmer may buy a mower and rake and the other may buy a baler. They may exchange these tools and both will have access to the full line of equipment needed for this agricultural enterprise.

This lumpiness of inputs characteristic of farming brings to mind another input which may be shared by two (or more) farmers. A male sheep, for example kept for breeding purposes may be able to perform the breeding services of two neighboring sheep farmers, thereby eliminating the need for each of them to make this investment. The cost of one ram may be shared.

Labor

The seasonal nature of agricultural production makes the requirements for labor seasonal, too. But frequently the time of heaviest labor requirements for one farmer will be different from the time that his neighbor (or neighbors) have heavy labor requirements. An exchange of labor between farms is a way in which both (or all) participants in the exchange may avoid the cost of hiring additional labor.

Also different farmers have different skills. One farmer may exchange his skill of tree grafting, for example, with another farmer's skill of horn removal from cattle.

The social implication of reducing the drudgery of labor by working together is obvious.

Land and Natural Resources

How can two people use their respective land and natural resources jointly in a way that it will produce more than they could have produced by farming independently?

Consistent with the law of comparative advantage each farmer should specialize in the production of that product for which his ratio of cost advantage is greatest (or his ratio of disadvantage is least) and trade with others. Let us suppose that two neighboring farmers are specializing, one in the production of dairy cattle and alfalfa hay and the other in the production of corn and wheat. They may both be better off if they consider their two pieces of land as one large farm and develop the rotation of corn, wheat and alfalfa best suited to the conservation and maximum productivity of land and still complementary to the dairy production of the first farmer. The nitrogen-fixing characteristics of alfalfa will benefit the soil of the second farmer, likewise the first farmer will have a build-up of surplus nitrogen in the soil which could be used efficiently in corn and wheat production. Any combination of complementary farm products will result in a net benefit to both (or all) participants of such a joint effort in land use.

In areas where land is fragmented, two farmers may arrange the exchange of land fragments which would be to the mutual satisfaction of both with a net gain to both in land lost in fence rows and paths and time lost in going from one fragment to the other.

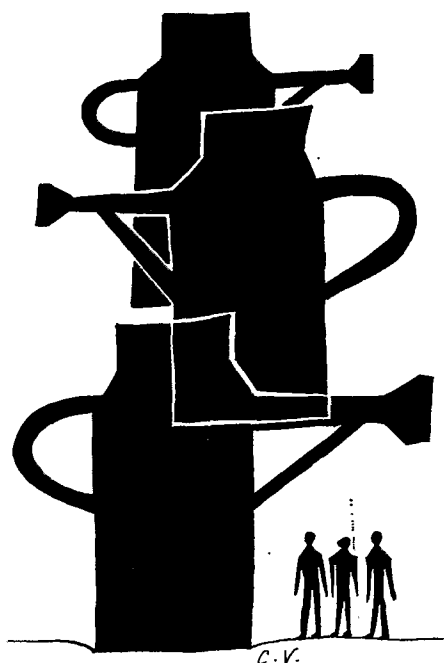
If two neighboring farmers have need for certain heavy equipment needed for land improvement or reclamation (such as, a bulldozer, land leveler, or tile-laying machine) they may share the fixed cost of having the equipment moved to their area thereby reducing the overall expense of making the improvement.

A well may produce enough water to serve the needs of two farmers. The cost of drilling (or digging) may be shared by both farmers. This would be cheaper for both than if each farmer were to dig his own well.

Likewise the cost of a pump for the well may be shared by both farmers rather than each investing in his own.

Investment in certain irrigation equipment (for example, portable pipes and sprinklers) may serve the needs of two farmers as well as one. The cost of this investment may be shared.

Open, sod irrigation canals which carry water from a trunk canal to the location of two farms may be losing great quantities of water through seepage. The cost of water to both farmers could be reduced if they would share the cost of lining the canal with cement or replacing the canal with another means of conveying the water to their farms.



Technology

A scarce resource among farmers is knowledge of the best techniques to follow in their farming businesses.

A simple exchange of ideas between neighboring farmers may benefit both. Likewise their respective sources of information may be shared. One may invest in a radio and the other may subscribe to a newspaper or magazine which provides a reliable source of technical information useful in increasing farm production. These may be exchanged and shared between (or among) them.

Marketing

Transporting products to market is a major cost of farm production. Joint ownership, rental or joint rental of transportation may result in reduced unit costs of transportation.

It may be to the mutual interest of two (or more) neighboring farmers to lengthen or improve a road serving them both (or all) making it possible for transport equipment to enter their farms.

Reducing Risks

There is a high risk of crop failure or low yield in farming. These risks are well known to the farmers and to those creditors who may be loaning money to them and setting an interest rate high enough to cover these risks. The high risk of no income or a low income are due to uncertainties of technology, health of the farmer and his family, fire, weather, pests, price for the products, and even the risk of over-extension of credit itself. By joining together farmers may help each other reduce the risk of loss due to these uncertainties.

Risks of Technology

When a new technique of farming or a new seed variety is introduced to a farmer he knows that it may not work. If he tries it, he does so with the knowledge of this risk of failure or low yields. He will reduce this risk if he tries it on a small scale first. Two (or more) farmers may join together in conducting such trials, each allowing a different variable to vary to test a larger variety of possible ways of using the innovation.

Another aspect of technology is timeliness of operation. There may be only one or two days within which the wheat, for example, should be harvested for optimal yield. The collaboration of neighbors may be helpful in two ways here (1), in helping the farmer decide which is the best day for harvesting and (2) helping the farmer with the harvest in the one day that is best.

Emergency Risks

Throughout history farmers have rallied to the aid of their neighbors when a dramatic hardship like death or injury

or fire hits. Why then, cannot this same spirit of cooperation continue in order to solve the less dramatic, but very real problems that plague the small farmer all the time?

Weather Risks

Flood, drought, wind, extreme heat or cold are deviations in weather patterns that represent emergencies to the farmers. Help from neighbors may make it possible for the farmer to recover.

Best Risks

Invasions of locusts or rodents need the joint efforts of neighbors in the area.

Spraying for weeds, fungus and insects may be done more efficiently by airplane. Neighboring farmers may join together in arranging for this service and obtain reduced rates by having the spraying done all at one time.

Price Risks

Farmers run the risk of receiving a very low price for their product, especially at harvest time when there may be a surplus of the product on the market. Two (or more) farmers may join together in constructing appropriate storage facilities for their products. For example, refrigerated storage may be too expensive for one farmer alone, but by joining with others and building one jointly they may be able to afford it.

Credit Risk

Farmers who borrow money may run the risk of over-extending themselves with credit. Jointly farmers may co-sign each others notes in order to reduce the risk of losing their property in case of loan default.

III. — PUBLIC ROLE

The above section gives examples of ways in which groups of individuals may reduce costs and reduce risks through joint efforts. These efforts can be made by groups of individuals with no help from the government. However, the amounts of benefits resulting from these joint development of a basic infrastructure and certain promotional activities.

Development of Infrastructure

Development of a basic infrastructure to complement the joint efforts of groups of individuals should include such things as :

1. Research for applying the results of findings elsewhere to local conditions.
2. Dissemination of technical information to the farmers.
3. Development of a network of trunk roads and railroads.
4. Provision of basic heavy transport vehicles such as trains, trucks and boats.
5. Irrigation and flood control dams with basic irrigation canals.

6. Adequate low cost inputs such as seeds, fertilizer and pesticides.

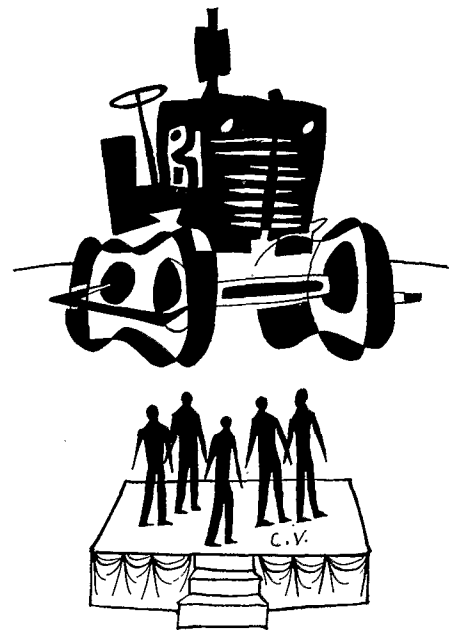
7. Adequate marketing services including storage, processing, transportation, distribution, standardized weights and measures, and price information services.

8. Adequate agricultural credit services.

9. Regulatory services to prevent and settle disputes arising over poorly stated and unwritten joint agreements of the kind discussed in Part II of this paper.

Promotional Activities

Though governmental resources are limited for the purpose of agricultural economic development it may be found that the returns would be very high from an investment of minimal manpower in promotional activities to encourage joint efforts by pairs (or groups) of farmers. The form of such promotional activities could be by means of mass media communication, mainly. The main theme of the promotion should be to make farmers fully aware of the benefits of joint efforts to (1) themselves as individuals and (2) their country.



IV. — CONCLUSION

Examples have been given of how individuals and governments may take action to reduce costs and risks of agricultural production by joint efforts in farming. Now, the extent to which these actions are complementary to the value premises stated in the beginning will be discussed followed by the suggestion that these joint efforts by pairs or groups of individuals must be the first step to the formation of larger and more formalized institutions of group farming.

Complementary to value Premises

Incomes and Levels of Living of the Population Should be Increased

Joint efforts in farming should reduce the cost of producing each unit of product substantially. This would result in increased incomes of farm families. It would also provide the scope for reducing costs of farm products consumed by non-farm families which would have the effect of increasing real incomes. Increased real incomes should lead to improved levels of living thereby complementing our first value premise.

Productivity of Scarce Resources Should be Increased

Farmers in underdeveloped agricultural areas of the world typically face a scarcity of capital, technology and management ability, and other inputs such as water, fertilizer and improved seeds. The discussion of joint farming efforts has included examples of how the quantity and the productivity of these resources can be increased for each farmer who joins with another farmer in the use of these scarce resources.

Public resources for increasing farm production are also scarce. The number of qualified personnel who have the time and are willing to go to farmers in all parts of the country and address themselves to solving each farmer's problem is extremely limited. Therefore, maximizing the returns from this scarce government resource is essential. The plan calls for a minimum of government participation in providing infrastructural support and in promoting the idea of working together with neighbors and friends. It is instrumental also in encouraging an attitude among farmers of « asking not what their country can do for them but what they can do for their country ».

Social, Economic and Political Equality of People Should be Achieved

Any activity of joining together will result in strengthened political position. If farmers at the bottom of social, economic and political scales are participating in joining together with other far-

mers to lower costs and solve their problems they will have advanced the notion of a more equitable distribution of social, economic and political power among the people.

The First Step Toward Group Farming

A movement toward large formalized institutions for group farming should begin with this first step—namely, joint efforts of individuals in farming. As these groups, started by individual farmers at the grass roots of agriculture, take on more and more members then institutionalized group farming will have evolved from the bottom, up. The author feels that this is a sounder approach to the formation of group farming organizations than the other more common (and less successful) approach currently employed in underdeveloped areas of the world—namely, the establishment of a government agency whose purpose is to form group farming institutions from the top, down. A « grassroots » approach of encouraging joint efforts of individuals on a small scale seems to be the more logical first step.

Besides the flexibility and versatility implicit in such an approach the returns to public investment should be substantially higher due to the small demands on government personnel compared to the large bureaucracies created in some countries attempting to institutionalize group farming from the top.

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