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EXTENSION WORK IN RELATION TO LAND UTILIZATION

by

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This subject is a very broad and inclusive one indeed, and in this brief paper I will make no attempt to treat it exhaustively. However, I am going to venture a few observations concerning the relationship of Extension work to Land Utilization, referring often to Montana, and assuming that the Montana problem does not differ fundamentally from the problem in other states.

In the days of land settlement in Montana, from 1880 - 1915, the attitude toward land was quite different from what it is in this year, 1931. The early settlers, like early settlers elsewhere, were fully occupied in a nip and tuck struggle to win from the soil the classical subsistence living of food, clothing, and shelter.

Agriculture, founded on new turned sod, was largely self-sufficing. Agricultural machinery, the plow, the binder and the wagon, were, when viewed in retrospect, comparatively simple. Farm power was biological power and farm transportation, at first by oxen and later by horses, was very restricted in cruising radius.

These characteristics of pioneering Montana agriculture were, of course, identical in all major respects with those of pioneering agriculture in the country as a whole. Because such an agriculture yielded so little above a subsistence and because of the assumption that an ever increasing population would depend mainly upon agriculture, there had early evolved the traditional fear of population outstripping food supply and land values were based upon anticipated scarcity.

Out of this traditional fear there developed an attitude of reverence toward land that was almost religious in nature and at the same time there developed the deep-seated conviction in the mind of society that the survival of the nation was dependent upon the ability of farmers to wrest a living, principally food, from the land. Deep concern about this problem was responsible for the growth of publicly supported research in agricultural production near the beginning of the 20th century. Later, upon the passage of the Smith-Lever Act, extension work was launched with its projects and demonstrations, as a sort of evangelical agency interpreting the results of research into a gospel of better agriculture. Extension work in its early days had the general welfare of the rural population at heart, but it was also, perhaps somewhat unconsciously, most seriously concerned with the problem of providing the population with the so-called necessities of life. In view of the initiating forces behind extension work it is very easy to understand why it was at first mainly concerned with improving the techniques employed by farmers and in increasing agricultural out-put. It is also easy to understand, in view of the fear of food shortage held by generations, how

the momentum of this reasoning behind extension work has carried this objective forward to the present. With a zeal to produce which amounted almost to fanaticism we did not, in the early years, recognize nor concern ourselves with diminishing returns in the way we do today nor was the comparative advantage or disadvantage of any particular type of production in any particular area as clear-cut as it is today. Labor and capital and the use of land were largely immobile from area to area and production was more or less self-contained by areas, or by communities, or even by farms.

In 1931 it appears as though the battle to save population from starvation has been won. With the development of improved technique in growing crops and livestock, the farmer finds himself reasonably well tooled in the art of agricultural production. The steam engine and particularly the gas engine have revolutionized transportation and, together with the above improvements in technique, have developed and brought into competition with Montana agriculture the most remote frontiers of the world. The biological power of the earlier days has largely been replaced by gas-and-steel power. With increased amounts of capital applied to land, management has increased, while physical man labor has decreased, in importance. The self-sufficing nature of farming has been greatly modified and Montana agriculture has, like agriculture elsewhere in this country, been pushed out into the main stream of an exchange economy.

With these changes making for greatly increased efficiency in agricultural production has come increased specialization and a wider assortment of goods and services from which the farmer can compose his standard of living. With rising standards of living for farmers and for other groups of society, there is developing quite a different attitude toward the age-old tradition of an increased population. It is now recognized, especially in this country, that there are satisfactions other than food which contributed to the well being of the population, that there is no particular virtue in mere numbers of people and that populations tend to strike a balance between the standard of living which they deem desirable, on the one hand, and the natural resources available on the other hand. In a nutshell then, we have an ever increasing efficiency in the production of feed and at the same time a declining relative significance of food in the standard of living.

These fundamental and dramatical changes are of utmost significance for, due to them, extension work finds itself cast in a new role and "the use of land" has a much different meaning from what it did 15 years ago.

It might be almost said that land no longer lends itself to classical definition. It is no longer hardly correct to say that land is characteristically scarce when we are using only 400,000,000 acres of land in this country out of a potential acreage of 1,000,000,000 acres. Even that clearest-cut characteristic of land, immobility or place location, is continually being so modified by improvements and developments in transportation that it is of only limited and transitory significance. Since we no longer need to use all available land as intensively as we know how, there has arisen the problem of land utilization wherein we consider the sorting and culling of lands to harmonize these uses with the laws of comparative advantage, and looking to extension work we find that it is no longer chiefly concerned with merely keeping people biologically alive. Further, we now

clearly see that only part of the people of a population need be attached to the land as agricultural producers. This is still somewhat of an iconoclastic idea to the man in the street and it sometimes frightens him, witness his concern over the decrease in agricultural population and number of farms.

A new philosophy of extension work will be concerned with re-directing the activity of farmers from handicrafts of self-sufficiency to such a utilization of capital, production techniques, and land as will yield them money incomes, enable them to maintain a relatively desirable standard of living in an exchange economy. At this point I would like to comment upon the often expressed idea that it is possible to have two levels of desirable living for farmers. In popular language, it is stated that some farmers will "farm to make money" and others will "farm to make a living." This is somewhat of an ambiguous statement and if by "living" is meant strictly self-sufficient agriculture, then such an ideal is undesirable and practically unattainable. As a matter of fact, the direct contribution of the farm to family living is largely limited to food. To illustrate: suppose we assume a budget estimate say \$1500 as the minimum requirement for a desirable standard of living. The farm can be made to contribute from \$400 to \$500 worth of food, but in order to obtain the other items of the budget, clothing, health, education, recreation, etc., the farmer must produce some product which he can turn out into channels of an exchange economy for a money income. Stated tersely, all farmers are farming to make a living and in order to make that living they must have money income.

In view of the fact that we must now consider sorting our lands and shaping them into uses to which they are adapted in the light of their comparative advantages and in view of the fact that extension work must concern itself with assisting farmers in obtaining money income, it becomes very clear, does it not, that there is need for a close correlating of extension work and land utilization. In the past there has been much unity of purpose in the objectives of work carried on in extension and land utilization, but that unity of purpose was often to a considerable degree unconscious. Now, there is need for a conscious correlating of activity in these two lines. In this, extension work has a more important function than ever before in that it can carry on vitally important educational work concerning the sorting of lands and the organization of production techniques on lands once sorted which will serve to guide farmers in their money making activities.

Such coordinating of extension work and land utilization may be developed along at least three major lines.

First, in the so-called production projects in extension, agronomy, animal husbandry, etc., the fitting of recommendations to harmonize with diminishing returns encountered. In this connection the comment might be made that research in the "production" phases of agriculture sets out an assortment of techniques, that is, ways of producing a crop or an animal. The problem of the farmer, and consequently the problem of extension, is to choose the technique or techniques from this assortment which is best suited to his individual farm and type of farming. In this connection there has been much confusion as to the meaning of efficiency. Extension workers and farmers have been sharply criticised because they have been interested in growing two blades of grass where one grew before. Insofar as the production of the second blade of grass has pushed the use of the land and other production factors

beyond the economic point of utilization, the criticism is justified, but insofar as the turning out of the second blade did not do this, then such condemnation is not justified. Surely, there is no ground for objection to higher out-put per unit of in-put if it represents a true increase in efficiency. Extension work in "production", by selecting and recommending the proper techniques, has as significant a role to play as ever.

Second, through the organization of extension projects in Farm Management so that the purposes and achievements of these are in harmony with the forces of comparative advantage involved. In planning and carrying out extension work in Farm Management it should be recognized that such work must be adapted to and responsive to not only the land resources but also to the skills of the agricultural technicians, to the character of labor, capital, and management available and to market demand. It should also be recognized that land is utilized only through the medium of production plants, that is farms and ranches, and that land utilization and farm management are blood brothers.

Third, through the organization of extension land utilization projects whereby the facts regarding land in any particular state or county are organized to reveal in an extension way the significance of the land resources in the production plants set up and operated by farmers. A most important objective in such a project is the presenting of such facts not only to farmers but to business men, landlords, and the public in general.

In Montana we are interested in all three of these avenues of approach and in the Department of Agricultural Economics we are immediately concerned with the last two. We are attempting to harmonize our extension work in Farm Management with the land resources which we have in the state. In an attempt to achieve this end we have organized an extension land utilization project. The work under this project logically falls into several divisions.

First of all an inventory of the land resources is necessary. Considerable research material from the soil survey and weather records is available or is being made available and needs only to be assembled and put into extension form. The concrete expression of this land resource is in terms of productivity and we are, therefore, developing productivity maps for counties and for areas. In making these productivity maps we are working in cooperation with the Soil Survey Division classifying the lands of the state according to their productivity. On the dry farming lands, we have been using the yield of spring wheat on summer fallow as an index and have set up four classifications; first class land being that which will yield 22 bushels to the acre, second class land that which will yield 18 bushels to the acre, third class land that which will yield 15 bushels to the acre; and fourth class land that which will yield 10 bushels to the acre. For the grazing lands we are using carrying capacity as an index; first class land being that which will carry one mature head of cattle on 15 acres for a 10 months period, second class grazing land that where 20 - 25 acres are required, third class grazing land that where 40 acres are required, and fourth class that where 60 acres are required. In this classification of grazing lands the cooperation of the Forestry Service as well as the Soil Survey Division has been enlisted. On irrigated lands, where the problem is more complex, we are attempting to establish a classification based on not only yield of crops but variety of crops as well. Paralleling this development of a scientific

classification of lands, we are also obtaining yield histories from farmers in order to check the classifications against their experience and particularly in order to establish the classification and its philosophy in the minds of farmers and the public in general.

117

At the same time that we obtain yield histories from farmers, we obtain simple farm organization records for the purpose of obtaining a cross-section of the production structure which is now on the land.

In considering the all-important problem of how farms and ranches should be organized and managed in the future, we are, after obtaining the above inventories, looking to information from the Experiment Station and production specialists concerning available technical skills, and to the outlook for the prospective demand for the products of the land. In setting up suggested farm organizations and management, farm management extension work in Montana is fortunate in having available not only the results of research in the technique of production but also the results of research which have been carried on in farm organization and management. This latter is limited to the dry farming lands and there is a very definite extension need for the results of similar work in ranch and irrigated farming. The acreage, the equipment, and the farm management practices, in other words the production plant and its operation required to yield a given income for family living will vary according to the class of land. In making recommendations concerning a specific farm or area Farm Management Extension can only generalize unless it has at hand a definition of the land resources, an inventory of the technical skills available, an interpretation of the outlook, and information concerning the principles of farm management involved.

We are hopeful that the development of such a land utilization project will result in a more scientific program of extension work. The shadowy function of land in production is poorly understood by the public in general and popularly accepted myths regarding land are commonly barriers to progress in all lines of extension work. By developing the definition of lands in terms of productivity and by a better definition of farm set-ups possible thereon, it would seem that extension specialists working with outlook, with production techniques, and with types of farming would be able to apply and carry on their work in a much more scientific manner. From such definition there should also develop a clearer understanding of terminology, for instance such terms as "diversification" and "specialization". Also, in matters pertaining to agricultural credit it would seem that farmers could be given considerable assistance in presenting their assets in an understandable statement and that lending agencies would have a much better basis for judging the soundness of the applicant production organization. Also, it would seem that with the information brought out by such a project, the formulation and interpretation of public policy in such matters as reclamation, acreage adjustment, and control of the public domain, could be more rationally developed. It is to be pointed out that in working toward these ends in a state, Montana for example, it would be very desirable to have similar information on competing areas which are turning out products in competition with the products or potential products of Montana lands. That is, there is a need to know what the comparative advantage of Montana lands is.

In conclusion it is worth recalling the fact that, since ours is a dynamic society, adjustment is a continuous process. Extension workers will have the problem of land utilization to deal with for some time to come. Since, in a dynamic society, lands do flow from one use to another it is possible that both research and extension could profitably consider means of increasing the mobility of uses of land, of land ownership, of farmers, and of capital. This is a field of considerable possibility in which little work has been done.