

THE ROCKEFELLER FOUNDATION

THE NATURAL SCIENCES

WARREN WEAVER, DIRECTOR  
HARRY M. MILLER, JR., ASSOCIATE DIRECTOR  
WILLIAM F. LOOMIS, ASSISTANT DIRECTOR  
GERARD R. POMERAT, ASSISTANT DIRECTOR

J. G. HARRAR

FIELD DIRECTOR FOR AGRICULTURE  
LONDRES 45  
MEXICO 6, D. F. MEXICO

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Dr. Warren Weaver ✓  
Dr. P. C. Mangelsdorf  
Dr. E. C. Stakman  
Dr. R. Bradfield

Gentlemen:

Enclosed please find my contribution to the proposed document to be prepared for Mr. Barnard. Since returning to Mexico I have been very much preoccupied with visitors, program activities and the International Congress of Agricultural Producers which is currently meeting in Mexico. Therefore I have had to work on this paper at night and have not completed it as soon as I had hoped.

I understand that the papers from all concerned are to be worked over and a tentative final draft submitted to each of us for criticism and suggestions and that subsequently the final draft will be prepared for submission to the President. If there is anything which I can do here to help further in the preparation of the final document, I shall be glad to do so.

Sincerely yours,

*J. G. Harrar*  
J. G. Harrar

Enc.

(DRAFT)

AGRICULTURE AND THE ROCKEFELLER FOUNDATION

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INTRODUCTION

It is an interesting fact that when the Rockefeller boards were first established two types of operation were foremost in the minds of those responsible for planning their activities. These were public health and agriculture. Just after the turn of the Twentieth Century our country, like many other countries of the world, was economically sound and at peace. Therefore the preoccupations of the philanthropists were naturally in the fields of medicine and public health; education; and a better standard of living for all through an improved agriculture.

Actually when the Rockefeller Foundation itself was established one of its avowed purposes was to promote agriculture along with public health although no definite organization was developed within its structure dedicated solely to agriculture. However, since the early 1930's more support has been given to agriculture through grants to leading agricultural institutions and in the form of fellowships to agricultural specialists. Since about 1940 this work has been extended into Latin America through a scholarship program which has included a number of agricultural scientists.

In 1943 the Foundation initiated its first operating program in agriculture, in Mexico and from this operation there has now been developed a second one in Colombia. These represent actual field operations in which the Foundation cooperates directly with the governments of the countries involved, in a research and training program involving improvements in the quantity and quality of the important food crops of these countries and aid

in the training of technical personnel with the ultimate objective that they themselves may in the future handle all of the work of agricultural development.

#### AGRICULTURE IN THE MODERN WORLD

Historically, agriculture has always been the most important single factor in social evolution. Civilizations have arisen and declined in direct response to agricultural possibilities. In the earliest phases of applied agriculture there was, of course, a tremendous surplus of land in relation to population. However, as world population increased so did the need for agricultural production and this was reflected first in greater total areas under cultivation and second, in attempts to increase yields per unit area. Population pressures have now reached the point in some parts of the world at which national welfare is so completely dependent upon agricultural production that in poor production years extensive famine may result. An underfed people is a susceptible people and therefore under conditions of unfavorable agricultural production world tensions tend to mount.

Some students of social science and some biologists adopt the view that improved agriculture, like improved public health, results only in increasing populations and ultimate chaos. These people apply simple arithmetic to the problem and believe that war, famine and disease are natural factors which reduce population pressures in specific areas and maintain the world balance. They draw parallels with examples of competition which occur in nature. Such persons overlook the application of intelligence to human problems and have failed to understand the still latent potentialities

of agricultural science or to foresee future developments in the social sciences.

It is a fact that the food producing capacity of the world is unknown. Modern statistics on world food production are continually being revised upwards as improved techniques result in increasing yields. It is probable that yields per acre will further increase as agricultural science continues to develop, and that the now underdeveloped areas with extremely low yields per unit area will steadily increase their production capacities. The wide difference in the production figures in different parts of the world clearly indicates the fact that agricultural production in the world today is operating at a very low efficiency level and that tremendous increases can be expected through the more efficient use of the improving techniques of modern agriculture. Moreover, the world's bodies of water, both salt and fresh, offer tremendous opportunities for food production through the development of methods for using these bodies with greater efficiency. Potentialities for food production from these sources are apparently unlimited and at the moment incalculable.

It is often stated that increased food and better health give immediate results in an increasing birth rate and decreasing death rate and therefore all attempts to improve agriculture and public health simply result in a more rapid approach to oversaturation with respect to population. It has been argued also that religious and other taboos operate against limiting populations through planned parenthood and similar social techniques. Actually it is true that higher standards of living bring about increased populations as a first result. However, higher standards of living permit greater educational opportunities and bring about the desire for more

of the material benefits of civilization. Subsequently, family size tends to decrease through either conscious or unconscious desires to balance the economic situation of the individual family with the size of the family. Ultimately, it is found that <sup>the</sup> size of family tends to come in phase with a high standard of living although family adjustment lags behind a rising standard of living. It would therefore seem to be one objective of the social sciences to determine how this lag can be minimized or where the curve itself may be interrupted to bring the two phenomena into closer relationship as rapidly as possible.

It is axiomatic that a well-fed world is a peaceful world and though an oversimplification of the fact, it may be stated that much of the conflict which has occurred in the world during the past decades has been the result of population pressures in certain areas. These pressures have been due to an increasing population without a comparable increase in food production and have resulted in a struggle to secure more land and a greater food supply in order to maintain a satisfactory standard of living. If through the application of modern agricultural science world food resources could be increased and at the same time natural resources protected, much of the unrest which is currently manifest might disappear. Moreover, agriculture has a definite effect on all other aspects of civilization. Those countries with successful agricultural economies tend to be the most progressive in other fields as well. When food production is not the chief preoccupation of a nation, attention may then be given to other fields of science and to the arts with resultant rapid social progress. It therefore behooves the world to make every possible effort to establish a satisfactory



agricultural economy in the best interests of a developing civilization.

OPPORTUNITIES FOR THE RF IN AGRICULTURE

In 1943 the Rockefeller Foundation initiated an experimental agricultural project in Mexico as an operating activity. At that time the Foundation decided to adopt a completely realistic approach to agriculture by actually participating in an operating program with the object of developing new materials, training personnel and demonstrating that a program of this sort can be successful in aiding in the solution of food problems of the nations of the world. After eight years in Mexico it is considered that the cooperative project in progress has clearly demonstrated the value of this sort of operation and that from small quantities of money and limited personnel, incalculable benefits may be expected.

The success of the program in Mexico and the growing success of its sister program in Colombia can be largely attributed to two factors, namely, the quality of the technical personnel, both national and foreign, in each program and the continuity of these programs. It has been clearly demonstrated that the use of temporary technical consultants as a means of improving agriculture in underdeveloped areas has little lasting effect. Actually this technique has been premature in its application in Latin America. The normal procedure should be to establish sound projects which as they develop lead to the establishment of additional projects and create a growing body of material, information and trained personnel which eventually might result in a situation where the use of techniques of consultation and coordination might have significant results.

The agricultural program in Mexico has attracted wide attention and has stimulated invitations for the establishment of similar programs in other Latin American countries. One such invitation has now been accepted and a small program has been initiated in Colombia with promising results to date. Actually, however, the Rockefeller Foundation programs now in progress have already had influence far beyond the boundaries of those countries in which they operate. Information and improved plant materials developed in Mexico have been made available to other Latin American countries; numerous visits have been exchanged with foreign scientists and the program in Mexico is becoming a training center for young scientists from other South American countries.

The problems of the Americas are of necessity common problems. It is no longer possible to live in isolation or to ignore the interests and problems of geographically related areas. Whatever affects any country in this hemisphere must inevitably affect the others and it is therefore only logical to attempt to apply the benefits of science to all of the countries for the greatest common good. This hypothesis may be applied on a broader plan to the world itself. However, it is obvious that work of this sort must be begun on a small scale and in a few areas and then allowed to expand as rapidly as progress and other factors permit.

With regard to the R.F. agricultural activities in the Americas, Mexico today stands as the hub around which future developments might be built. The experience gained in Mexico and the pattern of operation developed there can and should serve for other operations elsewhere and eventually result in an international integrated program of agricultural science with free exchange of material, information and personnel. Such a united

attack on the common agricultural problems would result in greater hemispheric progress towards the goals of greater food production and subsequent social benefits. Equally important results might be improvement in international understanding, increased friendship and solidarity between the countries of the hemisphere and improved standards of living for all.

It is conceivable that the type of operation which has been successfully carried on in Mexico and has extended to Colombia can be extended not only to other key Latin American countries but possibly to certain other areas as well. It is possible that tremendous opportunities exist in such areas as India and the Phillipine Islands and perhaps in Japan and at a later date in other asiatic countries. While it is fully recognized that it is impossible for the Rockefeller Foundation to attempt to accept responsibility for world food production, it is not unreasonable to believe that the Foundation might operate in a catalytic fashion in certain key areas and thus pioneer a pattern and a movement which in itself would eventually result in the desired effect.

It is believed that the pioneer effort in Mexico now not only offers real opportunities for greater social service through expansion into other areas but also a fundamental approach to the broad problems of human ecology. As the agricultural economy of a nation or nations improves there are even greater opportunities for developments in the social and natural sciences and greater expectation of major results from public health projects. It is therefore possible to visualize the future development of R.F. programs in which agriculture will serve as the spearhead of an attack on problems of food, health, <sup>and</sup> education which limit progress. Programs of this type in strategic areas might well serve as patterns for similar pro-



grams elsewhere supported by government and/or other agencies.

#### RECOMMENDATIONS

In the belief that the value of agriculture as a continuing and an expanding R.F. activity has now been clearly demonstrated the Advisory Committee on Agriculture wishes to make the following recommendations to the President and the board of trustees of the Rockefeller Foundation.

1. That agriculture be established as an integral part of R.F. activities and that it be accepted in principle that agricultural operations should be extended within the limits of economic possibilities as rapidly as demonstrated opportunities arise.
2. That agriculture be set up within the Foundation on such a basis that it will have opportunity to accomplish all of the objectives of a well rounded program of international agriculture.
3. That the policy of expansion be begun as soon as possible and that the program in Mexico begin preparing for such an expansion through the acquisition of additional personnel for training in Mexico preparatory to future assignment to other areas.
4. That consideration be given to the desirability of coordinating agricultural activities with those of other R.F. interests when opportune to do so and that Mexico be considered as a first possibility in this connection.