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PROCEEDINGS
OF THE
FIFTH INTERNATIONAL CONFERENCE
OF
AGRICULTURAL ECONOMISTS

HELD AT
MACDONALD COLLEGE
CANADA
21 AUGUST TO 28 AUGUST 1938

LONDON
OXFORD UNIVERSITY PRESS
HUMPHREY MILFORD
1939

3 cards

*Agricultural economics*THE SOCIAL IMPLICATIONS OF ECONOMIC
PROGRESS IN PRESENT-DAY AGRICULTURE

SECOND OPENING PAPER

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THIS topic calls for discussion of social well-being in the light of economic realities. The ultimate consideration is social welfare, but, since we are agricultural economists, we approach the subject of welfare from the field of economic facts and organization, and in respect to welfare are most directly concerned with the rural population. Nevertheless, this consideration of the topic assumes that all social phenomena are so complicated and so inextricably interrelated that the separation of phenomena implied by such words as 'economic' and 'social' are valid only so long as they serve the expediencies of discussion and the limitations of language. Furthermore, it is an evident fact that in the world in which we live the social welfare of the rural and urban populations cannot be wholly separated. It will, therefore, be seen that even an economic approach must be shaped by social factors that are not in themselves economic; and the consideration of rural social welfare cannot even momentarily ignore its involvement with urban or general social welfare.

This discussion is not so much one of facts or statistics, with which we are all more or less familiar, but of meaning and value in terms of human life. It is a search for the clarification of underlying issues and an attempt at a deeper understanding of them. This is difficult because if we stay on the surface we do not get much beyond naïve phrases. If we probe deeply we are in danger of misunderstanding because of terminology, because of the difficulties in stating generalizations and concepts of value in terms that are readily understood. This is a time when all men in the field of agriculture, consciously or unconsciously, have in the back of their heads their own completely or incompletely thought-out system of social philosophy. They may not, like Plato, write it out; but it is there just the same. When we psychoanalyse ourselves we find our social philosophy is revealed in the form of our attitudes, our unconscious acceptance of folk-lore, our faiths and prejudices, our personal frames of reference, our approaches. Because of this we know how difficult it is in the social sciences to secure scientific, logical

objectivity. To what degree we form our framework of social and moral ideas and then use economic research to justify it is a question some outsider will have to answer.

At the beginning I raise three major questions. They will not be answered fully, nor in one-two-three order, but they should serve to point the direction of this paper.

1. What are desirable goals or ends in farming or in society as a whole, and how do we know that they are desirable?
2. What are some of the present broad trends in world agriculture, and where are they leading in relation to the rest of society?
3. Can the present social, economic, and political trends be harmonized with definite and scientific welfare objectives?

The agriculture of the western world of to-day may be divided into two predominant types or patterns. The first of these may be called self-sufficient farming; the second is commercial farming. Europeans would speak of the former as peasant-type farming. It is of course understood that other points of view would employ criteria upon the basis of which agriculture could be classified very differently, and with equal validity. It is also recognized that there are innumerable degrees and kinds both of self-sufficient and commercial farming, and that differentiations could be almost infinitely refined. Nevertheless, the fundamental distinction between these two types of farming is clear, and consideration of to-day's topic must inevitably give primary attention to the differing social-economic patterns that are involved, their implications as to the rest of society, and their relationship to differing welfare goals that might be agreed upon.

It is pertinent to begin with some observations concerning the two agricultural patterns. Self-sufficient or peasant-type farming is an inheritance from an age of relatively simple technology and economic organization. It not only fitted that earlier age; it was both a product and an integral part of it. Yet in point of numbers of people engaged or of volume of production, its present world importance is greater than that of commercial farming. In 1929 approximately one-half of all American farms received only 11 per cent. of the total cash income from all agricultural production, and 11 per cent. of the total number of farms received about one-half of the total cash income.¹ Subsistence farming is not, however, a phenomenon explainable exclusively in economic language. Both

¹ L. H. Bean, 'The Margin of Economic Security for Farm Families', in *Annals of American Academy of Political and Social Science* (March 1938); also, O. E. Baker, *A Graphic Summary of the Number, Size, and Type of Farm, and Value of Products* (U.S. Dept. Agric. Miscellaneous Publication No. 266, Oct. 1937), p. 68.

economic and non-economic aspects are inextricably entangled. In some cases economic expediencies shape cultural development; in other cases economic habits form on the basis of institutions of a non-economic character. In the whole of it taken together there is an integration that has induced men immemorially to speak of farming as not just an employment but as a way of life.

Farmers operating in the pattern of self-sufficient agriculture seek their satisfactions and the fulfilment of their wants largely through their own or their village economy. Their economy is not primarily one of cash and exchange. Inseparably bound up with the economic realities of self-sufficient farming, though not correctly classifiable either as 'result' or as 'cause', is a pattern of life whose virtues have for ever appealed to philosophic reflection. 'Speak to the earth and it shall teach thee,' said Job. In the same tone the noble Virgil sang, in his second *Georgic*, 'O more than happy countryman, if only he knew his good fortune'.

Comparative independence of the market and of the outside world has inculcated in farmers of this type a spirit of sturdy independence and courageous self-reliance. Their struggles and their contacts were more with nature than with the world of men. They fed and housed and clothed themselves largely with the products of their own labour, and they tended in this simple sort of economy to expect gain only as nature might reward their industry and thrift. They were generally secure from the temptation, so common in a more complicated economy, to get profit out of unproductive effort. Father and son worked together in the field, and mother and daughter about the household; parenthood meant common occupations, constant companionship, and day-by-day home-given education. Work was long and hard, but it held satisfactions that were primordial and complete, for

'the blue-flowering field of flax or the crowded sheep in the fold would clothe the family through the next year, and the grain that yellowed in July and the bull calf browsing in the pasture would give bread and meat in the cold winter months. The procession of the seasons meant ploughing, seeding, weeding, harvesting; but it also meant feeling the tingle of rain on the cheek, knowing the secret of where the lark had nested, and seeing the sun rise red out of December dawn. Recreations and social customs were shaped in the pattern. Consider the Harvest Home, the husking bee, the quilting bee, or the custom of the bride going to her new home perched on the ox that drew the bridegroom's plough. Their language, their religion, their standards of conduct and their moral axioms hewed to the line.'

They have for ever distrusted the city and all it stood for, and bestowed their highest moral approval upon the simple things and simple customs familiar to their way of life.

But the world is changing. Under the impact of science and technology institutions are being altered more rapidly probably than ever before. Agriculture has felt profoundly the influence of the new commercial age, and its most perfect response to the new world of technology, of economic specialization and interdependence is the completely commercialized, fully mechanized, highly specialized farm operated as a business and with no standards except market efficiency. In its extreme forms exclusive susceptibility to economic and technological trends has led to such phenomena as suit-case farming. This suit-case farmer sees his land for only a few weeks out of the year. In some of the southern Great Plains regions he comes out late in the summer just in time to hurry his tractors into the single combined operation of ploughing, harrowing, and seeding the winter wheat, and then is gone before the dust clears from his gang. The following June he rushes out from town again, picks up a few itinerant hands, greases the tractors, sets the combines going, and is quickly gone once more. His farmer's thoughts are directed largely to counting costs, cutting expenses, watching the market, and wondering when to unload. He may operate a garage, a store, or a restaurant through most of the year; or if he is lucky he may live the whole year on the profit from his single crop. He has few or no buildings on his land, his home and family are in the city, and he is therefore inclined to oppose taxation for schools, roads, and other public improvements in the locality where his agricultural business is located.

Here, in deliberate extremes, are the pictures of the self-sufficient and the wholly commercialized farms. Admittedly there are relatively few farms to-day that are completely true to either pattern. The fully mechanized and wholly commercialized farm of to-day represents complete surrender to economic and technological forces. The self-sufficient farms that still remain represent the continuing persistence of social forces that are essentially non-economic and non-technological.

There are probably very few agricultural economists who would advocate a policy calculated to develop either of the extremes. To submit promptly and entirely to the forces of economic and technological efficiency is essentially to adopt wholly a creed of economic determinism, and amounts to establishing moral values and social welfare wholly upon an economic basis. On the other hand, to

cling stubbornly to the ideal of the extreme forms of subsistence farming is to deny that the world has changed, constitutes social conservatism in an exaggerated form, and amounts to rearing a moral code upon the foundations of Golden Age nostalgia. The agricultural economists attending this Conference will for the most part take positions which represent various compromises between the two extremes. The differing positions they take will depend largely upon their standards of moral value and their concepts of social welfare. The question, in other words, resolves itself into a question in social philosophy.

Concepts of social welfare have until recently tended to be very vague. Definitions of economics have frequently declared or implied that welfare was the goal or the criterion of economic thought, but the meaning of the term welfare was left open to shifting and varying interpretations. There are, however, trends in contemporary thought and action that give the term specific content. Upon the basis of the findings of the biological sciences it is now possible to establish some minimum goals of economic and social welfare.

Physicians working in the field of social medicine can agree reasonably well upon certain health standards, and upon the biological means of attaining them. Nutrition experts can set up fairly definite standards of food requisite to carry on life processes naturally and well. Psychologists and physiologists, although they disagree among themselves over many details, are none the less able to agree pretty well upon some specific principles relating to such matters as recreation, fatigue, and certain causes of individual maladjustments. Educators will agree pretty well upon minimum standards in education. Sociologists know the conditions that affect the incidence of such phenomena as insanity, crime, and suicide.

These provide materials upon which minimum standards of physical welfare may be scientifically established. It is a point of departure that has great potentialities. Studies like those of Dr. Hazel K. Stiebeling and of Dr. Mordecai Ezekiel are likely to eventuate in new kinds of economic action and realities. Dr. Stiebeling has compared estimates of average diets with physiologically satisfactory diets.¹ Dr. F. F. Elliott, Dr. O. E. Baker, and others have made

¹ *Diets at Four Levels of Nutritive Content and Cost*. U.S.D.A. Circular No. 296; also, 'A Dietary Goal for Agriculture', in *The Agricultural Situation*, xxi. 12 (Dec. 1, 1937), 18-20. Mention should be made also of the Nutrition Problem Studies made under the auspices of the League of Nations, summarized in *Nutrition—Final Report of the Mixed Committee of the League of Nations on the Relation of Nutrition to Health, Agriculture, and Economic Policy* (Geneva, 1937).

tentative estimates of the amount of land that would be required to meet such standards.¹ Dr. Ezekiel translated desirable family budgets into requirements for adequate national consumption, and production data into potential national production. On this basis he demonstrated that the nation has the resources and the techniques to provide a satisfactory standard of living for all our people, without redistributing the incomes of the well-to-do.² The studies made by the Brookings Institution of *America's Capacity to Produce* and of *America's Capacity to Consume* provide provocative material for those who approach the subject of social welfare from the point of view of specific minimum standards of welfare. It has been possible in the past in speaking of welfare to take refuge in fine-sounding but vague and meaningless phrases. To-day it is possible to say with reasonable assurance, 'Here are the definite minimum requirements of food, clothing, housing, schooling, medical facilities, recreation, &c. Here are the facts as to the amount of these minimum requirements that we actually attain. Here are reasonably accurate estimates concerning the amount of these goods that we are fully capable of producing within the limits of our present resources, technology, and organization.'

Two very significant generalizations always develop from the joint consideration of such data. First, comparatively low minimum standards of living would require a great increase both in general production and in the purchasing power of the lower income groups. Second, minimum goals of social welfare including physical, recreational, and cultural standards would not only necessitate increased production, but would involve far-reaching inner adjustments in agriculture and industry. It is difficult to foresee the effect of such information upon economic theory, but it is not hard to predict that widening popular interest in such facts and in this point of view is bound to have a profound influence upon action policies.

For the present there must be much vagueness concerning man's cultural, artistic, religious, and philosophic needs. Nevertheless the biological and social sciences are making progress in this direction, especially in the relationships they are constantly discovering between psychic and apparently intangible phenomena on the one

¹ F. F. Elliott, *Consumption Habits and Production Programs*, an address before the Farm Family Living Section of the National Outlook Conference, Washington, D.C., Oct. 30, 1934. Mimeographed by the Extension Service of the U.S. Department of Agriculture.

² \$2,500 Per Year—*From Scarcity to Abundance* (Harcourt Bruce, N.Y., 1936).

hand, and very real and measurable phenomena on the other. There is in the process of making a new and integrated science of man. Anthropology was the first science to develop certain very significant new points of view and techniques. In the first place, the study of primitive civilizations and peoples concerning whom there was little previous knowledge and comparatively few prejudices compelled anthropologists to study certain kinds of everyday phenomena which have deep significance yet which in a familiar environment are commonly ignored; and, with no interest involved, it was relatively easy to be objective about them. Secondly, because the obvious kind of social data was frequently rare or difficult to obtain, they were driven by necessity to examine the pertinent data gathered by other scientific disciplines, and to consider and integrate as much as possible all of the aspects of a culture. If you examine a good work in cultural anthropology, you will find that it makes good use of material from all the sciences ranging from geology to psychology.

The new science of man is essentially an extension of the methods and the point of view of anthropology—more specifically, of cultural anthropology. It is still too young to speak with authority. Yet its findings already have a discernible direction, and the tendency of the findings is very pertinent to the present discussion. It is clearly demonstrable that the variety of types of culture, past and present, is not only very great but also illustrates amazing differentiation; it is theoretically indicated that the variety might be infinite. Comparative study of various cultures discloses a strong universal tendency for various traits within a culture, whether indigenous or borrowed, to be integrated and harmonized. Institutions once established have great powers of persistence, even long after their original functions have ended and been forgotten. Out-worn but persisting institutions can cause severe social maladjustments. Such institutions can generally be slowly diverted to serve new ends—even ends wholly contradictory to their original function—more easily than they can be flatly eliminated. It is especially to be noted that so-called human nature and standards of moral judgement, like other culture traits, harmonize with the cultures in which they occur, and over a period of time change just as their respective cultures do.

It is reasonable to expect that within this generation the new science of man will be able to describe certain desirable cultural goals with realistic precision. When it does, social or economic planning can be established on a scientific base. It cannot do that

as yet, but it can with some assurance propose the following principles to influence the establishment of social welfare standards:

1. Orthodoxies of all sorts tend to be rationalizations after the fact.
2. Social patterns and ideologies, and so-called human nature, are almost infinitely variable. These things vary with the environment, and at the same time are part of the environment. Environment may change man, man may change his environment.
3. If new functions are introduced into a culture, they can generally be performed more smoothly by an established institution than by a new one.
4. The established traits of mature cultures are so integrated, and at the same time new social forces and institutional pressures are generally so many-sided and involved, that a policy of following trends of technological and economic efficiency exclusively would at least generally bring about an infinite series of social maladjustments, and would probably be self-defeating for that reason.

We have now prepared the ground for a return to the primary problem, which is: What sort of compromise between the extremes of self-sufficient and fully commercialized farming would be most conducive to the rural and general social welfare?

Although specific minimum standards of social welfare have not yet been worked out in full detail, and above all have not been integrated, we already know enough to be sure that the attainment for the whole population of the very minimum requisite to carry on life processes normally and well would necessitate increased production both of industrial and agricultural goods. There must, therefore, be no backward steps technologically. The general movement must be in the direction of increased production and efficiency.

On the other hand, wholesale and unconsidered adoption of mere technological efficiency cannot solve our problems. This would aggravate institutional conflicts, and would destroy abruptly the social stability and moral values that cling to the pattern of general farm life. We cannot in the first place wisely pursue economic ends that interfere with the spiritual and artistic cravings of *homo sapiens*. It is as true to-day as in Biblical times that man does not live by bread alone; and the Persian philosopher who said that with two coins he would spend one for bread and one for hyacinths spoke a universal truth. In the second place, we now have an efficient

technology that we cannot fully exploit because it has developed faster than man and his institutions could adapt themselves to it. The ultimate blame for the most disturbing maladjustments and confusion of men to-day can be laid with certainty upon the haste with which a commercial age precipitated modern technology upon social institutions rooted deeply in the long agrarian past. It is a secret to no one that we cannot now employ for purposes of social welfare all the technology we already have, and the reason for it is that society is not in adjustment with that technology.

Men have already to a large extent altered their desires to a degree where they crave the goods and services that modern technology, properly functioning, can supply. City people want crisp-head lettuce the year around, and distant fruits for salads, and certified milk each morning from farms two hundred miles away. Country people want automobiles, and daily papers, and electric lights, and central-heating plants burning coal from far-off mines. But they still cling to institutions and ideas which in their present form are incompatible with the social implications of the technology needed to supply these things. Man and his institutions change constantly, but they change very slowly. The problem resolves itself therefore into a matter of finding means whereby technology and the new institutions that technology has imposed may be adjusted better to the present nature and institutions of man.

Ten years ago I believed that ultimately technology would put the individual family farm at such a disadvantage that we should be led into some sort of industrially organized agriculture. I do not believe to-day that the trend in the United States is in that direction. It has turned out that the family-sized farm is capable of great engineering efficiency, and specialized plant and animal breeding can be performed by experts and the benefits of their efficiency widely disseminated. The small rubber-tired tractor, for instance, is making almost a revolution on American farms. It is light, susceptible to mass production at low cost, and, because of its rubber tires, very flexible. This highly efficient power unit fits admirably into the engineering pattern of the family-sized farm. Its cost is not inconsistent with the income from such farms, and manufacturers are making other implements which complement it admirably. In addition to this, the improvement in roads and the almost universal use of the automobile, the national programme of rural electrification, the advent of the radio, the development of consolidated schools with buses to pick up the children have lessened considerably the so-called isolation of the farm family. These descriptive generalities

may not apply to exceptional types of farming. The big cotton plantation, specialized fruit and vegetable farms, and other types that require comparatively large amounts of labour per unit of land, may not fit into the general picture. And there may be technological developments in the future that will alter the situation greatly. On the whole, however, there is no present cause for assuming that in the U.S.A. family-type farming must be abandoned in order to attain new goals either of social welfare or economic advantage. The great advantage of this is that it avoids the aggravation of the unemployment problem in the cities, and the far-reaching adjustments in urban economic organization, that a development of industrially organized agriculture would entail.

It seems, therefore, that technology is already beginning to adapt itself to the customs and social needs of man in at least some cases. Admittedly, however, there is still a large proportion of the farm population that present adaptations and extensions of technology cannot benefit. There are millions of farm people living at a very low standard. Because their land is poor, or because they do not have enough land, or because of inaccessibility, or for lack of capital, they cannot avail themselves of all of the material advantages of an industrial civilization. Instead, their natural ability to compete is reduced by the technological advantages of others, and they suffer doubly from the social maladjustments and the psychological confusion of this age.

There should be a thorough and deliberate search for means by which technological advantages could be extended to the under-privileged farm group without bringing about an abrupt change in the social pattern. There surely must be established institutions and folk-ways that can serve new purposes. The task is to find these and to accommodate modern innovation to them. It is possible, for instance, that in America such old institutions of neighbourhood co-operation as the threshing-ring, with only a little encouragement and direction, could evolve into a farm machinery co-operative, and thus bring in technological improvement upon the social basis of familiar institutions, and among groups that lack the means otherwise to secure it. There should be more experimental projects dealing with a unified community, such as the Dartington Hall project sponsored and directed by our President and his wife, Mr. and Mrs. L. K. Elmhirst. Several of the projects of the Farm Security Administration of the U.S. Department of Agriculture are in a sense experimental, as they relate to the under-privileged, the landless tenants, and rural industrial communities.

I have a great deal of faith in the potentialities of rural industrial communities. Many factors of a purely economic nature in my country have, in certain industries, reversed the previous trend towards concentration of industry. Among these factors have been the increase in cheap transportation and the spectacularly high land values in congested areas. In the case of many industries no positive economic advantage is gained by concentration. We should take advantage of this fact. Human values, social stability, and general social welfare would be greatly advanced if industry could be so dispersed that industrial workers could live upon small tracts of land sufficient in size to permit a small orchard and garden, and perhaps a few animals and poultry. This would provide contact with nature and growing things, and avoid the obvious ills of congested urban residential areas. The proper development of rural industrial communities could be made to absorb all the unemployed urban workers and all the submarginal farm population. Rural industrial communities would tend to narrow the gulf between the farmer and the industrial worker, and should help to develop the feeling of mutual understanding and interest and common brotherhood that men in society eternally crave.

In certain countries and areas where self-sufficient or peasant-type farming is very deeply rooted, an evolution is already taking place that may indicate what its own peculiar adjustment to the new world will be. This evolution is characterized by the development of consumers' and producers' co-operatives, by measures designed to safeguard operator-ownership of small farms, and by a re-orientation of old skills and handicrafts. Over-population is probably the greatest single difficulty to be overcome in following this line of evolution. This sort of solution of the problem of adjustment has some technological disadvantages. On the other hand, it accords very well with the self-containment that the trend of modern nationalism involves. It releases agriculture from the complete dependence upon the troubled outside world to which commercial agriculture is helplessly tied. And most important of all, it absolves agriculture from abrupt social dislocations and preserves agrarian social values that fully commercialized agriculture destroys.

There are hundreds of thousands of farmers in the United States of America to-day for whom there can be no realistic hope in the near future of rising above the economic level of subsistence agriculture. It is an evident fact that many of these do not at present attain the highest standard of living that is possible with the resources at their command and under the existing circumstances and

institutions. They lack many comforts and conveniences that they would welcome and which they could procure or make for themselves if they had a little training in the old skills and handicrafts. Cultural and artistic values will be attained by encouragement of all of the rural arts, including those that do not seem to contribute to economic ends. Spiritual as well as physical needs must be considered. Relatively little effort and cost in this direction would result in a higher standard of living and in an easing of the present social tensions within this group.

Any general solution of present difficulties and any general attainment of higher standards of rural and general welfare must be sought with full awareness that this is an age of vast institutional conflicts, greater in scope perhaps than any since the sixteenth century. The *condition* of the world to-day, brought about essentially by the impact of science and technology, is one of institutional and psychological confusion.

There are everywhere in the world to-day violent conflicts between old traditions and new realities. An increased desire for novelty and experiment in some cases lives side by side with groups and institutions that are driven to bitter intolerance by the threat of rising interests and institutional innovations. Many of the old things that seemed eternal are gone; many of the old principles that seemed universal and everlasting are shattered. Mankind clings to the dearest of the old faiths and adopts the most glaring of the new realities. But the world has changed too fast, and men are sometimes confused. They cannot feel sure in their loyalties, for the world seems to them a morass of altering standards, and they grasp desperately for the most contradictory ideals. Tradition, custom, and folk-lore clash headlong with attempts at rational solutions of our problems. This is a general condition of the whole modern world, and it affects agriculture as it affects everything else. No economic or social problems can be solved if the ideological and political factors are not taken into full account.

The *political-economic trend* of the age is for governments to assume increasing responsibility for the promotion of the economic and the social welfare of their citizens. The action of groups or organizations for the attainment of social ends to an appreciable extent is replacing the action of the individual. It seems the tendency for them to begin as private or pressure groups and for their functions ultimately either to be taken over or to be regulated by the State. Whether we like it or not is beside the point; the fact remains. Furthermore, there is every indication that the present trend is

towards still greater political direction of social and economic policies. Every government has some kind of positive programme to-day for rural and agricultural betterment. These programmes relate directly both to income and to institutions. Popular demands and general circumstances indicate that these programmes will be extended in the future rather than curtailed.

As a corollary of this trend, there is a well-defined search for formulas upon which effective policies and programmes of agricultural adjustment and farm income may be developed. These formulas must tend to adjudicate or conciliate the opposed interests that might arise between agricultural and non-agricultural groups within nations.

Two other facts or trends are worth noting. There is a very definite upward push of low-income groups, both agricultural and industrial. And there appears to be a tendency to replace the former ideal of technological progress with a new ideal of economic security. These are subsidiaries of the trend towards governmental assumption of economic and social responsibility.

The present condition and the present trends involve the unavoidable implication of social planning. This is really no longer a debatable subject. It is a fact. Positive social planning with social welfare objectives is now being carried on in varying degrees in all countries, both democratic and totalitarian. I believe that social planning, even of an extensive nature, is possible within the framework of genuine democracy.

Planning in a democracy involves planning upon all the different levels of government. The policies upon which planning is based must of necessity be approved by a substantial majority of the citizens. In a democracy we still have much to learn in the way of devising new institutions and new mechanisms for making planning a product of the democratic process. There must be an extended and broadened educational system that will improve the ability of the citizenry to take part in the process of policy-making. This constitutes a challenge to all educators to teach less dogma and to cultivate greater tolerance of new ideas. It is also a specific challenge to agricultural educators to devote proportionately less attention to technical studies, and to give proportionately more attention to the social sciences and the humanities in order that the new generations of farmers may have a broader understanding of man and of society. The experiments in agricultural education now being undertaken by the University of Florida are of great significance, and deserve world-wide attention.

One of the best devices developed thus far for social planning upon a democratic basis is the old and simple expedient of providing legislators and administrators with technical advisors. The legislators and the elected administrators are responsive to the democratic will, and the experts advise on methods. When the experts come to have their technical equipment more firmly established in an integrated science of man, this combination will serve very well.

The really greatest hope for the development of effective planning and for the solution of our basic problems lies in the development of this science of man. With that development there will be scientists properly fitted to advise upon political and social procedure. Economics will both contribute to and profit from the development of the new science of man. It will take its profit in the form of a realignment of its own discipline in the light of what the other sciences can discover concerning the nature of man and of the world in which economic forces operate. It will contribute by solving technical problems which will be attacked from the point of departure of this new orientation. Economists will no longer be isolated practitioners of an isolated science, but will function as members of an integrated scientific team.

I have contrasted the two patterns of culture in which the farming of the world is carried on to-day. History is a succession of cultures, of patterns of ideas, of institutions that grow out of them, of conscious or implied goals of mankind. In the past they have evolved and changed, and they will continue to do so. The commercial pattern is young. The peasant pattern is old. From certain points of view they seem to be going in different directions and striking out on different roads.

Commercial agriculture is the product of science and agricultural technology, both in the realm of mechanics and germ plasm. It has resulted in great efficiency and great increase in the products which the farmer has to exchange in a money economy for goods and services produced somewhere else. It is a natural part of the complex commercial economy of this civilization. It is a culture the same as feudalism was a culture or any of the distinct civilizations of the past were cultures. Commercial farming of to-day is sick. It is part of a sick commercial civilization. As the years have gone by the commercial civilization has grown more and more complicated. Owing to nationalism and the prospects of war and other causes, it is ceasing to be a self-adjusting economy, and men are turning to the political state to keep its parts in adjustment.

Some of the great anthropologists of to-day have scepticism about

the increasing complexity of our culture. In the past there have been cultures which have been too complex for man to control and to operate. Is our culture heading that way? As a part of this growing complexity I think there has been an over-balance of the material side of life with a consequent loss of the cultural, aesthetic, philosophic, and religious side. It may be that this is producing an environment which is foreign to the full nature of man and that farm people are adversely affected.

The peasant culture is old. It is easier to adjust because the amount of exchange is small. The size of the holding does not permit mechanical advantage even though there may be improvement in plants and animals. Since the farm is small and the volume for exchange is relatively small, there must be many things in the growing standards of welfare which science is making that the peasant cannot have. While there was and is much in the way of security, culture, and religious life in peasant farming, it also has its illness, which is over-population. When outlets for surplus population either through migration to undeveloped countries or to city industry is cut off, then peasant agriculture begins to suffer from over-population. It therefore turns out that both commercial farming and peasant farming are in trouble, and the prospects ahead are none too good.

Science and technology are producing a new culture in the world, a new environment for mankind, for agriculture, and therefore for the farm family. This new culture will eventually be much different from commercial farming with its present trends and peasant farming with its present trends. Science and technology will give plenty of high-quality agricultural products to be exchanged, and will provide increased quantities of industrial products for rural people. Farming will be balanced with nature so that the soil resources are stabilized.

By conscious, enlightened attempts to adjust technology to man and his institutions, social and cultural values will be retained, and many serious dislocations will be avoided. The same anthropologists who questioned the present trend towards complexity think that the environment in agriculture comes the nearest to being the kind of environment which is adapted to the expression of the full nature of man. On the cultural side I hope there will be great developments in rural art, literature, religion, and philosophy.

When viewed in the light of these troubled times, farm relief measures, agricultural policies, and means of agricultural amelioration are merely symptoms that the cultural pattern of farming is slowly adjusting itself to a new world. We can be hopeful because

adjustment is taking place. The stresses and strains are being equalized little by little and year by year. It would be unfortunate if society were so rigid that it was static in its external structure and processes at a time when so much was going on below the surface. The direction and the speed of this adjustment will depend upon a number of things. Education of certain types will facilitate and make the adjustment earlier. Education of other types will make it more rigid and difficult. To go through these conscious adjustments, agriculture will have to depend not only upon the separate social sciences, but upon the whole of the science of man. It must develop its art, its cultural and religious side, and, above all, a philosophy of agriculture which is consistent with and interpretative of both the scientific and spiritual aspects of farm life.

DISCUSSION

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In compliance with the kind request of the President to speak on this subject after hearing the very interesting papers of the first two speakers, I would like to outline in brief some social implications of economic progress that concern us in Germany. I will also point to some guiding principles that are significant for the scientific and practical solution of the social problem and, therefore, merit the attention of this Conference.

What we call *economic progress* and *modern agriculture* are typical offspring of the era of liberalistic economy. No previous era had so revolutionized economic life or had led to such unprecedented liberation of technological and economic progress. Thanks to the efforts of science, technology, and economy, the development of agricultural production shows in all civilized countries an unparalleled success. In Germany, for instance, the agricultural output *per capita* of agricultural population was almost doubled in the last fifty years. And even after the War this increase continued in spite of all retarding factors and in spite of the loss of important agricultural areas by the Treaty of Versailles.

But surely nowhere was this unprecedented development without serious social implications. Above all, this era gave us deep insight into the fundamental social requirements concerned in the healthy development and persistence of a nation and taught us to assess the importance of agriculture to the nation and the State not exclusively on economic grounds. In this respect particularly the era now passing will always be a valuable lesson.

Without aiming at comprehensive treatment of the subject and without dealing in full detail with all causes, I will point to four respects in which some facts prove to us in Germany to be very clearly social implications of the economic progress of modern agriculture and, seen from the viewpoint of the whole State and nation, to be of decisive importance. Together they form a complex of social problems and relations and, at the same time, characterize the present situation of the rural population.

1. The proportion of the rural population to the whole population is continually declining. For instance, in Germany the ratio of rural to urban population has been completely reversed in the course of recent decades, and the rural population has literally become a social minority. In the struggle for existence on the part of agriculture, this phenomenon naturally represents an accentuating factor, for the increase of the urban masses, which must be fed by agriculture, undoubtedly contributes to the exercise of growing pressure in the direction of more rationalized organization of farm operations and of continual increase of soil utilization by technical means.

This evolution, with a large-scale development of the industries on the other side of the picture, nevertheless holds out a considerable menace to the social structure of the State as soon as accelerated industrialization shifts the economic centre of gravity out of the boundaries of the State and as soon as the social and vocational changes due to industrialization not only drain the normal surplus of population off the country-side, but also make inroads into the very substance of the rural population. It is too often overlooked that not only does the proportion of the agriculturally employed population decrease, but also the small rural industries and rural handicrafts decline. And thereby the source of the flow of skilled workers to the industries is undermined. If to-day we have a pronounced lack of skilled workers, it is to no small extent a consequence of the fact that we have relatively too small a peasant population. Overgreat industrialization at the expense of agriculture in the scheme of international division of labour can, it is true, be justified in theory, if there is a guarantee of permanent world peace and if it presents no menace to the social pattern. But the history of the nineteenth century has belied this theory, and the experience of the past two decades is not encouraging.

In theory the further question might well be debated: What minimum share should be granted to agriculture in our highly developed industrial-urban civilization under the assumption of continually increasing progress? There almost seems to be a biological

law according to which the share of agriculture may be the lower, the higher the general standard of living. It is particularly attractive to follow this line of thought if we are convinced that there are no limits to technological and mechanical advance. But if we fully think out this idea, we must clearly perceive that in such case the city and the whole urban development must be fundamentally re-organized and that the city must fulfil the countryside's vital functions, particularly the regeneration of the nation. I would not like to affirm that this would be permanently possible.

2. The second implication applies to the system of tenure and labour. The implications concerning the system of tenure cannot be so clearly traced to economic progress. It must be borne in mind that almost everywhere the development of the present forms of ownership has been influenced by State and legal actions, by historical factors, and physical conditions, so that here the free play of economic forces cannot be studied in the abstract. The German system of tenure is primarily the result of historical factors and is the outcome of the liberal agrarian reform of the nineteenth century.

But I think it can be perceived that, regarded purely numerically, the typical size-groups of the family farm have grown, a tendency which may be recognized in most other countries besides Germany. The most clearly apparent fact is that, in contradiction to the Marxist doctrine, the law of concentration in the sense of complete domination of the large-scale enterprise does not hold good in agriculture, and that since the nineties a decrease in the number of large farms and an increase in the medium-sized peasant farms is distinctly noticeable.

The characteristic feature of German agriculture, namely, that almost 90 per cent. is based on independent individual enterprises, has been maintained until now in the general line of development. But it must be noted that this is only true if we do not regard the debt liabilities from the middle of the nineteenth century onwards as a loss of independence and of the owner's rights of free disposal. The tenant system, so extremely prominent in the English system of tenure, has never really taken root in Germany.

But the greatest implications brought about by the economy and technology of modern agriculture lie in the field of *farming systems* and *labour systems*. Here exist all the grave problems which we witness in the dissolution of the old traditional community forms of village and homestead and in the menace to the labour system of the peasant family farm. One can only understand how deeply all this moves us in Germany if one remembers that in an old country in the heart

of Europe, wedged in on all sides, the tensions between feudal tradition and industrial revolution, between old and new forms of farm management, must assume far acuter forms than in younger civilized countries and that, therefore, social changes must be more deeply felt.

The modern farm, viewed in the light of the science of farm management, is essentially the fruit of economic considerations and requirements. Therefore its principles and criteria are rationally established. The problem of size of holdings—undoubtedly the favourite subject of scientific agrarian economic discussions—is therefore also all too often judged from a purely economic point of view, heedless of the political and social implications which, in the long run, are decisive. For surely it must make a difference to our common European-American civilization whether new land is occupied by some few great farms which do no more than supply food produced on large-scale industrial lines, or whether this land is operated as the property of many independent families and thus forms the content of a well-filled life of a healthy and socially sound stratified population. Of course, it cannot be denied in the course of the technological-rational development of our age that the large enterprise can claim a number of advantages over the small holding. But if higher national and State objectives necessitate the maintenance of a broad stratum of rural population attached to the land, we are faced with the great task of raising the smaller farms to the level of efficiency of the larger enterprises and of bringing to them the advantages of effective application of technology. I agree with Mr. Wilson that there are great possibilities of adapting technology to the specific characteristics and needs of the peasant-family farm.

The fact that, notwithstanding industrial pressure, the family type of labour system has survived in agriculture, and even shows growth in the increase of medium-sized peasant farms, is significant for the consideration of our subject. It is undoubtedly a proof of the force of social persistence lying in rural folk, and of the effect of active counter-forces.

But, from a labour point of view, does not this withdrawal into the firm position of natural and self-sufficient existence imply a closing of the door to technical progress, and does it not represent a retreat to more primitive economic systems? We in Germany at any rate cannot afford permanently to exclude technical progress from a part of our peasant farms. Because of the density of population all farms, whether large or small, must be active members of a market economy. I need only mention that in Germany we have only 68 ha.

of agricultural land per 100 inhabitants, even including the areas that will in the near future be brought into use by drainage and reclamation of waste land. We are not in the same happy position as, say, Canada with over 3,000 ha. of farmland per 100 inhabitants.

In contrast to the problems of application of technology which offer, under the assumption of satisfactory income conditions, as yet extensive possibilities, the provision of labour and the maintenance of the ties to the land are becoming ever more difficult. The difficulties commence with the peasant servants, maids and farm hands. They are greater on the larger peasant farms which hitherto were least adapted to the employment of married workers. In all size-groups the number of workers per farm has considerably dropped since pre-War times. Here there is a causative connexion between the rural exodus and rationalization of farms; in their alternating relations these two factors have alternately aggravated each other.

The problem of the rural exodus is surely at present the most urgent social problem of modern agriculture, even from an international point of view. This is not the place to discuss to what extent this phenomenon belongs to the general symptoms of capitalism. We cannot be content to view the problem as a cyclical occurrence. Here the fundamental question is whether the rural exodus, i.e. not only the abandoning of the agricultural profession but also the flight from the country-side, must in every case be deprecated. In other words, when does the rural exodus begin to be a source of change to the whole social system? That men should depart to the towns and that they should flow into urban callings is *per se* quite a normal and natural process; it is even desirable as long as the sources of rural fertility flow abundantly and as long as this transfusion of blood serves to promote healthy growth and enhanced efficiency of the social body. But it means a menace—and this is our position now in Germany—as soon as in a restricted area of food production the rural population only just suffices to maintain the nation and also begins to lose in internal biological vitality. Dr. Niehaus will refer to these matters in greater detail.

3. All these considerations inevitably lead to the problem, which is the third to which I wish to refer: National Income. It is a far too neglected fact that in almost all countries, especially in those with a high development of urban-industrial civilization, agriculture has a greater share in national *labour* than in national *income*. Here we see most clearly the distribution of power between city and country and the economic predominance of industrial and commercial activities.

In almost all countries with highly developed industries and with

a high standard of living we find a growing discrepancy between the accumulation of income and wealth in the cities and the income standards of the country-side. It almost seems as if the main lines of development lead to conditions under which those who base their existence on income often find unlimited chances of increase of income in the more comfortable urban environment, but under which the possibilities of increase of income for the rural population are vanishing more and more, in spite of more strenuous and laborious working conditions. The city is more and more the only centre of higher incomes and accumulation of capital, and therefore the source of credit, whilst it is growing ever more difficult to direct the flow of capital in a scheme of organic circulation to the centres of basic agricultural production. The shortage of capital must be considered a permanent feature of modern agriculture; the periodically recurring governmental refinancing policies which are unavoidably necessary are a drastic proof of this assertion. The effects of this shortage of capital have repeatedly accentuated the struggle for existence. The counteracting measures of rationalization, taken up again and again by agriculture, have brought temporary relief, but in the long run rather postponed than brought about a definite solution. It may even be said that in this continual struggle for a satisfactory standard of living life itself has been sacrificed, that is to say, the ever-severer struggle for existence and the consequent changes of life's ideals have contributed to weaken the biological efforts of the rural population.

If we thus ascertain social tensions in the tendencies of income conditions between town and country, we can equally well observe the severest maladjustments and injustices within agriculture. These abuses include both the discrepancies of incomes of owners and workers as well as the differences which in free marketing are due to market proximity and long distances from the markets, and also the differences arising from varying physical conditions. This last problem especially is of growing importance to nations whose food situation does not permit them to allow marginal lands to drop out of utilization. It is incompatible with our social conscience that the happy owner of most valuable loam land should earn not only land rent but also the entrepreneur's profit, whereas the peasant on marginal land only ekes out an existence in spite of all ability and thrift, and scarcely earns a return for his labour. Here the economic and the social developments show the widest divergence.

What has been said as to horizontal differentiation also applies vertically, above all in the case of the mountain peasants of the

German Alps. Just as in the plains we could observe in the post-War period a certain concentration on the better soils, here we clearly observe a retreat from the heights to lower regions. But this process signifies a shrinkage of living space and of area available for food production. For in our situation the abandoning of these marginal areas can by no means be justified by the greater productivity of the better land; and the loss of production on the one hand is not compensated by the gain on the other.

4. All this leads to my fourth point the assumed contrast between town and country. Without entering into the historical and legal development—here again Dr. Niehaus will give fuller details—I wish to point out how town and country grew strangers to each other and were ever more drawn apart in culture and spirit. Owing to the economic preponderance of the industrial-urban development, rural folk were to a great extent won over to the urban mentality, so that its own specific life-pattern and life-values could no longer assert themselves. This social contrast between town and country, which stands out through the whole century, is ultimately one of the causes of the growth of class feeling which, originating in the cities, was a typical feature of the bourgeois industrial world.

In the course of this development the country-side was culturally and spiritually impoverished, quite apart from the fateful selective effects of which I will not speak here. The greater the influence of urban intellectualism on culture, the more was the country-side shut off from the cultural life of the nation and led an isolated life of its own. The whole system of all forms of education was ultimately determined by the city and by urban thought. Even if here and there valuable counter-forces stirred in town and country and championed the maintenance of healthy peasant culture, their brave but lone fight remained almost without any effects. Among the general public this social contrast and the extinction of all life-values of the country-side were unhappily accepted as inevitable. There was, therefore, no effective action to create a common level of life-order by emphasizing the great uniting common racial values.

If we summarize the results of this review, at the end of this era, which dawned so full of promise in the eighteenth century, we see on one hand astounding progress in production and its technical processes, but we see that paid for by the menacing social and—even more important—biological disruption of rural folk. The old unity of life and economy is destroyed. It almost seems as if the means of life overgrew the goals of life, and as if the weapons of the struggle for existence were turned against life itself.

The decline of the biological force of the rural population especially is to us a matter of gravest concern, for here we touch upon the problems of the existence of nations and the laws of their survival. This last fact particularly influenced German agricultural policy to follow the path leading to a synthesis of life and economy and to adapt technological progress to the biological and social goals. Here I would not like to speak of a compromise, as Mr. Wilson does; I consciously choose the word 'synthesis'. And we must find this synthesis. We cannot abstain from mobilizing and utilizing all productive forces to the ends of national increase of production; we cannot relinquish economic progress. Thus it is not a question of attempting to stimulate artificially a retrograde trend, 'out of nostalgia of the Golden Age', as Mr. Wilson puts it, and of retiring into a benign peasant romanticism, or of recommending misconstrued social conservatism. We fully welcome technological progress, and we wish to co-ordinate it to the living social and economic realities, so that it is no longer a menace to life but becomes an impulse to life by serving life.

These considerations, which at present force themselves on many nations, lead to the great social-political reforms and measures of economic policy which characterize the world to-day. It lies in the nature of these matters that there can be no universal solutions; that the solutions must be sought according to the actual situation of each country and by each country itself. Above all, the numerical relations between population and area are here of fundamental importance. The greater the density of population, the closer must naturally be the mutual social connexions within the population; and the more urgently the outlined social problems are felt, the greater will be the scope of State action on social policy.

As to Germany, our situation is characterized by the fact that owing to the dense population of our territory the factor of political influence gained more and more prominence; conditions could not be allowed to drift in *laissez-aller*. The best proofs are the settlement policy since the end of the eighties and Bismarck's system of social insurance. These tendencies were more emphasized after the War, due especially to the restricting clauses and consequences of the Versailles Treaty on the whole German economic system. The cession of territory not only weakened Germany's raw-material basis, but also abruptly raised the population density. All that bitter necessity dictated in the way of social measures by State action in many fields and originated out of the political situation of the moment has now been subordinated to one uniform and guiding principle

and has become an integrated part of the whole reconstruction of German life.

The starting-point and social content of this new order of life is the revival of the national community. This is the basis of the new form of life and governs the organization of the nation and its territory. If, in contrast to Tönnies—who very aptly characterized the contrast between community and society, but himself did not believe in new forms of community life—we are convinced that, in spite of progressive rationalization of our modern civilization, community is nevertheless possible, we are strengthened in our convictions by the fact that thanks to a political revival in Germany a national community has replaced a society disrupted by class strife. It is our task systematically to realize the ideal of community right through to the last circles of life and to fill economy with community philosophy and social spirit by means of effective social policy.

Politically this task demands a total planning and ordering of all domains of life. We believe that a new land order must be the starting-point and goal of such order, and this new order must stand in contrast to the liberalistic legal conception of unchecked free disposal of the land (freedom to subdivide, freedom to sell, and freedom to encumber). The German land law has therefore been fundamentally changed by the *Reichserbhofgesetz* (law of hereditary peasant farms) and several laws of utilization of areas. Our ideal is to find the best possible co-ordination of the nation, territory, and State, that is to say, a synthesis fully serving the purposes of a sound social structure.

This is our criterion for all detailed questions of agricultural policy. For instance, quite apart from all dogmatic discussions, the problem of the size of holdings interests us in so far as it is a matter of finding the optimal size-groups and soundest intermixture of size-groups from the social, biological, and economic aspects. As to the minimum size of holdings, we are concerned that the size of the farm should really give the owner the chance to benefit by economic progress and to take part in the 'give and take' of the national economy. Full regard is given to these factors in the *Reichserbhofgesetz* and the recent Reich decree concerning regrouping of strip farms, which mainly deals with the consolidation of land in the strip-farming districts and agricultural distress areas. It must be remarked that urgent social problems are to be found not only on the large estates of eastern Germany but also in the peasant holdings of the strip-farming areas; in the interests of economic progress the latter may be even more urgent than the former.

Formerly, it was characteristic of the general view of farm labour that it was considered unskilled labour. But, especially in view of the future technical equipment that will be needed if the peasant farm is to keep abreast of the general technological progress, increased and higher demands on the peasant and labourer will be made. It is not enough to give the young peasant and farm-worker a good vocational training, as has been increasingly provided thanks to the expansion of our agricultural education system in recent decades; he must have quite a new receptiveness and clear perception of what his position, his tasks, and duties in the national community imply. The growing technological character of farm labour and of the whole atmosphere of rural life calls for men who by adequate mental and bodily training have been rendered immune to the destructive influences of progress. This training of our male and female rural youth is carried out by the peasant high schools, peasant schools, and the National School for Physical Culture of the *Reichsnährstand*. Here I would also mention the useful work of the German Labour Front which likewise concerns itself with the social aspects of village life ('Strength through Joy', 'Beauty of the Village'). Mention must also be made of the National-Socialist Welfare Service.

Because of the importance of the housewife in a family labour system and in peasant economy, special attention is directed to easing the labour burden of the housewife and to her training. The Girls' Labour Service has proved a material aid to peasant households and is a valuable means of acquainting urban youth with rural labour conditions.

To-day the farm labourer receives vocational training, ending with the farm-work test, assistant's examination, and master's examination on the system already known for a long time in the handicrafts. A number of measures are being introduced and are already partly in operation in order to improve workers' housing and to regulate the economic and legal aspects of working conditions, especially with a view to strengthening the ties of the worker to the land and providing a social and economic ladder.

The question of income was decisively affected in Germany by the introduction of price control as part of the regulation of agricultural markets. The basic pre-condition was thereby provided for security of existence and for intensifying economic progress. Now, in the case of increasing supplies, the peasant need not fear a drop of prices. The inflow of goods from the world market is also regulated by control of imports and exports according to economic requirements.

Whereas in the past the fear of a divergence of costs and prices was always imminent, the present price policy is designed to prevent a discrepancy between the prices of industrial products and means of production of industrial origin on the one hand, and prices of agricultural products on the other hand.

Whereas in the past the differences in incomes and wages that were due to soil quality and to the distances and conditions of markets seemed to present an insoluble problem, to-day this question appears subject to political management (fixing of price zones, commodity quotas, transport policy, &c.). We are now just beginning to deal with these problems which all ultimately affect income conditions. Precedence was given to more urgent tasks such as elimination of unemployment, reconstruction, and reorganization of our industries in the Four Years' Plan.

The considerations of the relations between town and country have been totally revised. In the conception that town and country are equally privileged members of the whole structure of State and nation, it was necessarily a prime task to find a common level of life. But this signifies not only that the townsman must be once again made familiar with the country and that he must understand the sense and significance of rural life, but also that the peasant should realize that a common fate unites him to the townsman.

The main object was to prove to the whole nation that in these days of a high level of economic and technological efficiency the peasant section can scarcely exist by his own resources and that it cannot continually give of its substance without receiving from the nation in return a corresponding volume of transferable values as part of a sound economic circulation. For not only certain professions and trades but the whole nation benefits by the rural biological vitality and productive labour. Therefore the removal of social maladjustments in agriculture is not the concern of the industry alone, but of the whole nation. This is the sense in which we apprehend the promotion of agriculture in recent years, as a means of rightly applied increase of economic efficiency, not as preferential support of a single group.

The form and the intensity of economic progress in modern farming are primarily determined by the men striving for progress and making use of progress. That is always a matter of the frame of mind and ideals. We are aiming at a uniform mental, cultural, and spiritual renaissance. Our faith in the uniting power of the national community and the life-values of a sound organization of the people and the land directs our efforts to bringing the youth back to the

land as the external symptom of national vitality. It governs the training of all youth, ranging from the peasant's and worker's boy to the sons of the trader and civil servant. The National Labour Service, the Rural Aid, the Rural Service of the Hitler Youth and the Students' Organizations, the Rural Year, the Rural Training School of the Girls' Youth Organization are all proofs of our efforts to break down the mental and spiritual barriers between town and country and to unite them under a higher ideal of national policy.

Science also, particularly social science, has undergone changes in the course of this development. Whereas previously, being purely economic, it limited itself to establishing laws of motion of more or less mathematical and physical type, according to which progress primitively moves more or less in linear manner and economy is conceived as a mechanism with automatic steerage, modern economic science strives to understand the workings of economy from an organic biological viewpoint under the influence of human motive power. In this respect I found the statements of Mr. Wilson highly interesting and fully agree with what he said.

This new angle of approach primarily views economy as part of a great historical development, subject to the political conditions of the area in question. Absolutism and the frigid coldness of thought, abstracted from space and time, is replaced by the diversity of vital actions in time and space. This signifies an obligation on the part of science to the living realities and the extension of the radius of every discipline of science. If in Germany we call this fundamentally changed basis 'political science', it should be noted that we do not mean the infusion of politics in the service of group interests, but the co-ordination and subordination to the great goals of the nation.

Within the range of agricultural science, the effects of progress on the social structure force us to introduce, to an increasing extent, social aspects into all branches of our agricultural science and to co-ordinate these aspects to agrarian policy as the basic science of agriculture which is devoted to national interests. It is therefore with great interest that we follow the development of rural sociology in North America.

In the organization of science in Germany all this has led to new forms of co-ordination and co-operation. In the field of agricultural science the *Forschungsdienst* (Investigation Service) is the great common organization; in the wider field it is the *Reichsarbeitsgemeinschaft für Raumforschung* (National Board for Area Utilization). Whereas the *Forschungsdienst* originated out of the voluntary

desire for co-operation on the part of all agricultural scientists and represents a new form of scientific co-operation, the *Reichsarbeitsgemeinschaft für Raumpforschung* is the great and comprehensive organization bridging the boundaries of the various faculties, in which all branches of economic science which deal with the utilization of German territory co-operate in the common task of promoting the organization of the nation and its area.

Thus I may say in conclusion that we see new forces at work in all fields of political, cultural, and economic life in Germany, all uniting in the common task of opening the path for progress and increased agricultural efficiency with a careful concern for the social needs of everyday life. This progress is indissolubly bound to the whole development of modern economy and to Western civilization. But we only regard such progress as being lasting and true when it is measured by the welfare, not of the individual, but of the whole nation, as the supreme social criterion within the nation. The free play of creative individual forces, indispensable in the interests of general activity to every civilized country, must be accompanied by a well-thought-out guidance and control of the play of forces. And if we thus understand and foster the essence of economic progress, we bow to the deep wisdom of the words written by the English cultural historian, Henry Thomas Buckle, about the middle of the last century: 'The only progress which is really effective depends not on the bounty of nature but upon the will of man.'

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It seems a little unfortunate that I should be called upon to discuss the subject which has been opened by Mr. Wilson and Dr. Booth, for I am in general agreement with the points of view of the papers. In fact, in the paper on 'Agricultural Economics as Applied Economics'¹ which I presented to the Cornell Conference in 1930 I tried to raise, and in part to supply tentative answers to, some of the questions asked in Mr. Wilson's paper.

My own clear and firmly held view has always been that the effective direction or manipulation of agricultural and rural institutions will at times require the service of all the reliable social sciences—and in particular of the studies which we call, for convenience, economic and social history, economics, political philosophy or political science, social psychology, and sociology. Under some circumstances, as in the case of work in Africa or Polynesia, we may

¹ *Proceedings of the Second International Conference of Agricultural Economists, 1930.*

need also the assistance of social anthropology, but largely because in these parts this science covers the ground which among the industrialized nations would be covered by the sciences mentioned above. We may, in fact, find both scientific fallacies and practical dangers in attempting to apply the findings of cultural or social anthropology to modern society.

It is a long remove from the simple economics of the farm-management survey and its philosophical environment, or from the simpler and cruder marketing studies, to the suggestion of the application of cultural anthropology to the solution of current problems. It is a remove which seems to me unnecessary. Agricultural economics has made great strides in recent years, both outwards in its content and upwards and downwards in its apprehension of important relationships. Rural sociology has also shown practical development, and at some points there has been useful fusion between these two sciences.

If an outsider might make a suggestion to American agricultural economists it would be to the effect that there are useful fields of study in the social economics of agriculture, and in the institutional economics of agriculture and rural life, with comparative study of institutional economics of other industries and types of environment, which should be cultivated before any special advance is made towards cultural anthropology.

There are, however, several points at which criticism of Mr. Wilson's text would appear to be useful. Like some sociologists and anthropologists he is apt to play with sentiment in unscientific and, in the long run, impractical if not dangerous ways; and, like all pioneers, he is tempted to be more enthusiastic than the material prospects warrant. Some of the results of these weaknesses will repay examination.

We speak not objectively but subjectively when we speak simply of farming as a way of life. If we completed the phrase we would say farming is a special way of life, a specially attractive way of life, or a specially satisfactory way of life, or we might say—as many farmers and their wives have said—farming is a rotten way of life. If we were looking at farming as a way of life in any objective sense we would soon see that farming makes merely one set of the numerous ways of living. The professions have their ways of life distinct from those of farmers, foresters, fishermen, railwaymen, or coal-miners. But although there may be some degree of common form in the professional ways of life, there are also differences for doctors, lawyers, ministers of religion, and school

teachers. But no one could doubt that foresters, deep-sea fishermen, mercantile marines, railwaymen, or coal-miners have ways of life distinct from one another. Certain distributive workers also have distinct ways of life. There is always an integration of the mode of earning a living, the mode of eating, the mode of using shelter, the mode of obtaining rest, the modicum of leisure and the mode of using it, the modes of entertainment, the modes of other social relations, especially those set up in religious or educational attachments.

Farming itself shows many of these integrations—not a way of life, but many and very varied ways of living. The emotional content and the indications of realities in the phrase 'farming is a way of life' will vary when we say that:

- Grain farming of the Great Plains is a way of life;
- Cotton-growing in the Southern States is a way of life;
- Cattle-ranching in the Western States is a way of life;
- Corn and hog farming in the Middle West is a way of life;
- Citrus-growing in California is a way of life;
- Poultry farming is a way of life;
- Truck farming is a way of life;
- Dairy farming in New York (or Wisconsin) is a way of life;
- Rice-growing in the swamps of China is a way of life;
- Peasant grain-growing in the Balkans is a way of life;
- Dairy farming in Denmark is a way of life;

and these are only a few of the possible cases.

If we intend to extol farming as a way of life we should fully describe the life—i.e. the work, the leisure, the earnings, the spending, and other items of the life—of the group concerned, but, when we get to this point, it will be realized that the examination and description of farming as a way of life means everything that has been covered by agricultural economics and rural sociology, and perhaps a little more.

There is a reversal of historical truth when Mr. Wilson says that we accept economic determinism and the establishment of moral values and social welfare wholly upon an economic basis, when we submit economic development to the forces of economic and technological efficiency. When mankind has consciously pursued technological and economic efficiency in the sphere of production, it has done so in order to find some escape from economic determinism, in order to find some measure of freedom in which it might develop moral values and social welfare throughout the group concerned. The escape from primitive production is an escape from

economic determinism. A return to primitive forms of production would be a return to far more intimate and effective economic determinism than we have at present.

At the bottom of p. 44 of Mr. Wilson's paper there is the suggestion that economists who set high standards of moral values and of social welfare will favour the more primitive systems of agriculture, but this is not the case, unless Mr. Wilson is thinking only of the more negative moral values and the forms of social welfare that arise from these. On the contrary, it will be those economists who wish the greatest freedom for technological progress who will set the highest standards of social welfare; these will ask for technological progress and efficiency because they see the need of greater material resources for social-welfare uses.

In his appreciation of the modern developments in the social sciences, I entirely agree with Mr. Wilson, although I am bound to remind him there is just danger of psychology, of social anthropology, and of the ideas of the value and importance of the integration of cultures being used for purely conservative ends. Indeed, one should perhaps go further and say that in the case of psychology in particular there is danger in the use of the pseudo-science for the purely class purposes of the dominant social classes. For instance, the tendency of 'intelligence tests' to show that intelligence varies with social class is doubtless a great comfort to the professional classes which design and apply them, but there is little doubt that the tendency is the result of spurious science.

There is a strong suggestion of the danger of the perversion of ideas in Mr. Wilson's proposition that the integration of cultures is so complete and institutional, and social pressures are so various and involved, that a policy of following trends of technical and economic efficiency exclusively would at least generally involve an infinite series of social maladjustments, *and probably would defeat its own ends.*

Before any such suggestion of practical principle arising from the study of cultural anthropology is accepted, it is necessary to remember that society has never followed 'the trends of technological and economic efficiency *exclusively*' (my italics), and that this has not been the main cause of social maladjustments. Indeed, the suggestion that social maladjustments have been due to class, group, and other institutional obstruction to trends of technological and economic efficiency is equally valid and fair.

In fact, the suggestion that following these trends exclusively would defeat its own ends has no justification in experience; first,

because, as already stated, they have never been followed exclusively; secondly, because a fair reading of experience in the modern period in which technological progress occurred would show a vast improvement in the condition of the people of the countries in which it occurred.

Then it seems to me there is an assumption running through Mr. Wilson's paper that technical progress and economic changes are primarily and almost solely responsible for social break-up. If one were examining the actual process of change in Great Britain and, I think, in the main in western Europe, that assumption would not be justified. Indeed, I think it would be true to say that the break-up in the mental pattern, the break-up in the ideas, came long before, almost a century before, the break-up in economic organization or even the application of the new knowledge and new forms of organization which brought about the industrial and agrarian revolutions. If we developed that statement—the development would take a long time—one could trace fairly definitely the experimentation in agriculture in the early part of the eighteenth century to the same forces as gave us a century earlier the translation of the Bible into the language of the people, the tragedies and the comedies of Shakespeare, and the massive epic poetry of Milton, and the break-up in political thought of the seventeenth century leading to the new development of scientific philosophy with Bacon, and from there one can go forward right into the agrarian revolution of the eighteenth century.

I raise this point not only for purposes of getting historical accuracy but for the purpose of reminding you that economic changes, based on changes in technical processes and methods, fundamentally rest on human curiosity and the modern development of disciplined curiosity which we call science. It is quite impossible to stop that process of applying the human mind to the industrial and the general problems with which human individuals and society are faced. There is no danger, perhaps, in Mr. Wilson's or in Dr. Booth's paper or in anything we have heard this morning of suggesting to society that it might move backwards. But in actual politics there is very considerable danger indeed in suggestions being made that the grants and the general machinery for agricultural research should be reduced because they are leading society into difficult positions. And there are many people in the commercial world who would be very glad indeed to see the arrangements for social organization and control of research reduced or even removed in order that commercial firms might choose the same

methods for their own purpose; in other words, that the powers of science might be prostituted to commercial uses far more than they are at the present moment.

Not one of our modern societies has yet moved anything like far enough away from the primitive walls of economic determinism. Let us not think for one moment of sacrificing anything that we can gain by further application of scientific knowledge in technical processes to obtain greater efficiency in agricultural production. Dr. Meyer this morning said that in Germany the rate of progress had been measured by the statement that the output per man had doubled in the last half-century, a rate of about 2 per cent. per annum, which, if I remember correctly, is the same rate of increase in efficiency as was found by Ezekiel and Tolley for the United States for the pre-War and the immediate post-War periods.

If one were taking the western commercial world over the period since 1850, the rate of progress is, as near as one can measure, almost exactly 1 per cent. per annum. In other words, it would take a hundred years to double the output per man. And yet, over the world taken as a whole we have the fact that something between four-sevenths and five-sevenths of the total population is required in agriculture to produce foodstuffs and raw materials. Under those circumstances the real problem of the world, even for the industrial commercial world, is that of finding out how we can utilize the knowledge which we already have in order to economize labour and men to raise the standard of living for the populations of those nations with which the western nations are in constant contact.

If one were taking the United States or Great Britain, the probability is that only about one-fifth or one-sixth of the population is required to produce foodstuffs and agricultural raw materials for the whole population. Even if we applied the nutritionists' standards to the feeding of the population, it is very doubtful whether we would want a very much bigger proportion if we were to organize production on the basis of using current scientific knowledge. Obviously, if we have regard not only to what we call the backward nations but to many groups of poor families in Canada, the United States, and I would even say Great Britain, we have still to find ways of applying the knowledge which we already have to technical processes and to economic organization to get us the means of providing the minimum requirements of the population, not only for physical maintenance and reproduction, but as far as is possible for the development of personality in all individuals in all classes.

Next there are the suggestions that welfare has never been defined,

and that physiologists, biochemists, psychologists, physicians, and educators can set minimum standards of human requirements. This is so up to a certain point. Every one welcomes the new sense of social responsibility which is coming to the professions which arise from the natural sciences, but people who are concerned with human welfare must look with a certain amount of suspicion on the standards which are set and on the probable effects of setting them.

What is necessary is that social organization should provide for each family the amount of purchasing power which will command the total of the various minima and then leave the family to distribute its resources. Unless this is the method, we go back fairly close to the slave system. An alternative form of this statement is that a certain degree of liberty of use of resources, certain degrees of choice, are necessary to welfare. Welfare is not achieved by the supply of certain minima of food, of clothing, of housing, of education. This is the case if only because the minimum requirements are themselves variable and the individual or the individual family is, on the whole, the best judge of the proper balance to be maintained between one set of supplies and each other set.

Another suggestion made—one which is so dangerously misleading on paper—is that society can provide a satisfactory standard of living for all its members without redistributing the incomes of the well-to-do. The essence of social superiority and inferiority does not consist of any absolute standards; it is entirely comparative. If we raise the real standards of living of the lower income groups, then by the same process we reduce the values of the present standards of the higher income groups.

In order to maintain the same differences as now exist, we have to raise real incomes for all groups when we raise them for the lower groups. The really important question for the politician will be not the adequacy of present resources and techniques to provide higher minima for the lower income groups, but their adequacy to provide for a universal increase. Unless present resources and techniques are adequate to provide for universal increases in wealth, their use for the provision of certain satisfactory minima of supplies for the lower income groups will be of the nature of redistribution of wealth—and of the nature of reduction of the comparative wealth of the well-to-do.

Every economist will realize at this point that any diversion and redistribution of productive resources for the benefit of the lower income groups is, in fact, a redistribution of wealth. At certain points it will be profitable to the well-to-do to raise the standards

of the poorer groups. (We may feed, stable, and clean the horse better in order that he may work more efficiently and produce a higher income for his master.) But when we get beyond the point at which all the supplies given to the workers go back into the economic system, when they begin to get supplies which are used for purely personal purposes, then such supplies will not only be unprofitable to the well-to-do but will be a positive disadvantage by reason of their reduction of the present difference between the poor and the well-to-do groups.

No one doubts that present economic resources of the western world, its existing and possible techniques of production of services and production, transport, &c., of goods are equal to providing for a big rise in the minimum standards of the lower income groups, and it is possible that they would prove adequate for some universal increase in wealth, but in this case the question of the importance of the comparisons between the poor and the well-to-do will arise, and it will very likely be found that the highly well-to-do will strongly resent the removal of certain differences between themselves and the poor.

It is not likely that the establishment of adequate standards of nutrition, clothing, housing, hygiene, education, and leisure for the lower income groups will occur without extensive economic, political, and social struggle. The alternative is a wide and deep development of sympathy and comprehension leading to sacrifice of some existing, and the cultivation of alternative, satisfactions amongst the well-to-do.

But, as regards the facts and the probabilities, Mr. Wilson himself rather implies that it may be difficult to avoid reduction of the comparative differences between the poor, for whom the minimum standards are to be provided, and the well-to-do, when he says that 'a great increase in general production and in the purchasing power of the lower income groups' would be necessary for the supply of the minima. Also when he says that their supply 'would involve far-reaching inner adjustments of agriculture and industry', he is, of course, saying that it would involve redistribution of demand for land, labour, and capital, and thus a redistribution of wealth, although such redistribution would not be restricted entirely to the possessions of the well-to-do, but would include 'labour' as well as 'capital'.

Another assumption seems to be that the causes of friction, perhaps one should say jolts, in the social economic world are social and not economic. It seems to me, looking as a stranger, or at least

an outsider, at the United States, that the causes of friction here are not essentially social. Indeed I think it would be true to say that if we could make such economic arrangements in Great Britain or in the United States as would take into employment all or practically all our unemployed people, if we could make such arrangements as would increase the effective purchasing power of the lower income classes even by 10 or 15 per cent., we could leave every social adjustment to take care of itself. It would certainly be true that during the nineteenth century, when the forces of economic progress were working most rapidly, although there were pains and trouble, there was never the contemporary desire, such as we find to-day, to escape back into a more primitive system. Indeed, if one is looking at temporary economic conditions in the United States, is it not seen that the chief obstacles to further progress, the chief obstacles to social adjustment, are not social resistances set up out of the conflicts of two patterns of life, but are, in fact, obstructions which are consciously opposed to progressive social forces by certain financial and industrial groups? Is that not true? If that is not true here, it certainly is true in some other countries. To try to escape, into forms of rural industry or forms of peasant farming, from the necessity of attacking the essential problem of making the economic system work, seems to be one of the worst forms of psychological and social escapisms.

I would ask Mr. Wilson to reconsider his position with reference to rural industries and subsistence farming, because it seems to me that not in Great Britain, not in Germany, not in France, not in the United States, is it possible to segregate rural and industrial urban groups in the population. It appears to me that all the dominant forces in our society, or practically all of them, are going to arise in our urban and industrial groups. They will be dominant in the press; they will be dominant on the radio; they will be dominant in their ability to set social standards of diet, of dress, of furniture, of housing; and they will be dominant in the general world of propagation and spread of ideas. Rather than think of any attempt to segregate an urban and a rural group one should think of the forces or the conditions which are necessary for the integration—the complete integration—of those two groups.

And here, perhaps, I come to the most controversial point of my statement. Mr. Wilson is looking to some disciplining, if not restriction, of the forces of technical progress for the protection of what he calls in general terms 'the family farm'. I remember the President's injunction this morning to think of that term and what it means

when we use it. But I must say that the chief characteristic of the family farm wherever it appears is this: it is the most effective institution for the exploitation of the agricultural groups which has been found by the non-agricultural and dominant groups in society since the break-up of the Feudal System. And whenever we speak of the insufficiencies of the agricultural portion of the national income, we pay tribute to the family farm as an institution for the exploitation of the agricultural community. When I say that, I am not expecting any rapid or perhaps at present any radical transformation of the general system of organizing agricultural production. But I do say this: if there is not to be worse social and economic maladjustment in our great modern societies than there has been in recent years, we have to provide forms of education, and opportunities of migration and transfer of people, perhaps both ways from agriculture to other environment and from other environment to agriculture, in order that we may build up one single society. Dr. Meyer told us this morning that that is the aim of contemporary Germany. Germany is finding some ways of attempting to build a single integrated blissful economic society. Those ways perhaps are not open to the United States, but other ways are, and I say to you, as I say to my own countrymen and myself, our job as agricultural economists, even if we are working with other social scientists, is to find the ways and means by which we can make the agricultural group, in its expectations of education, of social status, of ability to consume, and of opportunity for development of personality, equal to any other group in the whole national population.

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I fear that when I have completed my remarks some of you may think that I am more in disagreement with Secretary Wilson than I am. Many of you know that, if he and I could sit down for a couple of hours and talk his paper over, we would come to pretty general agreement on almost everything in it. However, when any of us starts writing we let shades of meaning creep into what we write that reveal our subconscious attitudes, but not our reasoned judgements. Surely some of this has crept into his manuscript. I shall undertake the unusual role of pointing out some of these in the form of a running commentary on the text of the paper.

Let us start at the point where Secretary Wilson speaks of the two 'predominant' types or patterns of agriculture, *self-sufficient* and *commercial* farming (p. 42). When I first encountered this statement, I thought these types were intended as mere concepts and not as

actualities. Yet throughout the paper one finds references to them as actually predominant. They are both spoken of later in the paper as commonly carried on to-day. For the United States, this is far from true. Dr. F. F. Elliott's careful classification of the farms in the United States in 1930 singled out only a half-million, out of our over six million farms, that he classified as self-sufficing because receipts from sales were not greater than the value of products produced and consumed by the farm family. This statement may appear to be inconsistent with the figures, quoted from Mr. Bean, about half the commercial product arising from 11 per cent. of the farms; but it is not. Mr. Bean's statement has to do with the extent of the concentration of control of agricultural resources in larger farms. The two statements are consistent with each other.

We have in the United States another half-million who earn half or more of their living from non-agricultural work off the farm. For various reasons the majority of these are more properly classified as commercial than as subsistence farmers. For one thing, they are for the most part not living in the back country, but near to industrial cities.

It does not behove me to speak for the peasant farm of Europe; but I shall be somewhat surprised if the majority of them do not produce more for the market than the value of their own produce consumed at home. I doubt if it can be truthfully said that in western Europe, or in the western world generally, self-sufficient farming is any longer dominant. Instead, commercial farming alone holds that position. The *dominant* type of farm in the United States is the middle-sized family farm. The frequency curve by size-groups shows a high concentration in the middle areas—and although there has been some lowering of the height of the curve since 1880, the shift has been mainly to the *small* rather than to the *large* side. There is not the slightest suggestion of any bi-modality. Similar curves that I have constructed for ten other countries are also without any bi-modality. But the modal farms in some of them, it is true, are pretty small.

If Secretary Wilson was looking for the basic contrast in the situation, he should have made it in terms of hand agriculture versus machine agriculture. The peasant farm of Europe and the self-sufficing farm of the United States are alike in the respect that most of the production is with hand tools or with relatively little horse labour and power. Secretary Wilson and I on one Sunday last summer visited a 'subsistence homestead' to which Appalachian families were being brought. We were told that these mountain

families probably would cultivate only so much of the arable land given them as they could plough and cultivate with one horse or mule. The dominant type of cotton and tobacco farm in our southern states is highly commercial in the sense of producing for the market, but it is also very much a hand-labour farm.

Why do we have these small hand-labour farms in the United States and elsewhere? Secretary Wilson, speaking of them as 'self-sufficing farms', says that 'such of them as still remain represent the continuing persistence of social forms that are essentially non-economic and non-technological'. Here is another place where I must differ with him. I would say that they persist very largely for the highly economic reason of a high ratio of population to the land, which makes the *per capita* product so small and wages and earnings so low that hand-labour types of farming have comparative advantage there. Secretary Wilson speaks of over-population as the 'disease' of peasant farming. I would say that it is the essence of it. They are one and the same. By definition, one could not exist without the other. If a rural population were to decline, the ratio of men to land would become lower, and less of the production would presently be by hand.¹

Middle-sized family farming also persists in a large measure because of economic reasons. The savings from substitution of mechanical power for horse and hand labour and of using large power units are more than offset on such farms by the economy of relying mainly upon family labour and combining family living with the farm business. Secretary Wilson's paper points out how new developments in smaller power units, and the extending of some of the advantages of large-scale operation through co-operation and the like, give further competitive strength to the middle-sized farms. The main economic reason for middle-sized farms, however, is the same as for small farms—a ratio of population to the land that gives comparative advantage to a type of farming that combines hand labour with machine production in varying proportions.

There are parts of the United States, especially in the Appalachian region, and similarly parts of Europe, where the high ratio of population to land gives comparative advantage to a diversified type of farming in which the majority of families live more than half from products obtained from the farm. There are more farms in

¹ Small farms also persist of course for other reasons, especially in areas with mainly larger farms, because of the low capacity of many individual farmers; in other cases because of a preference for types of production requiring hand labour, poultry, small fruit, truck, &c.

the United States, and no doubt in many parts of Europe, where a high man-land ratio is accompanied by a dominance of production for the market. As a mere matter of the arithmetic of fractions, however, the consumption by the family is likely to be a greater proportion of the total on small hand-labour farms than on larger farms.

If I were undertaking an analysis of how non-economic factors were influencing the persistence of small farms, my first move would be to turn to the study of population movements and migration to see what keeps numbers high in some places and not in others. There has been a vast amount of futile speculation in this country and elsewhere about the 'proper' degree of intensity in agriculture. You can talk about this till the cows come home and not get anywhere unless you do something about changing the ratio of population to the land; or the proportions of the population living on farms and in the city.

The title of the copy of Secretary Wilson's paper which I have (which differs from the title on the programme) is 'Economic Agriculture and the Rural and General Social Welfare'. It does not seem to me that the writer has really taken the phrase 'economic agriculture' in its literal meaning. Instead, he has discussed the possible conflicts between agricultural technology and rural social welfare. There are several statements in the paper that indicate that Secretary Wilson considers technological agriculture and economic agriculture as identical. On page 44 he states: 'To submit promptly and entirely to the forces of economic and technological efficiency is to adopt wholly a creed of economic determinism that amounts to establishing moral values and social welfare wholly upon an economic basis.' On page 48 he speaks of 'a policy of following trends of technological and economic efficiency'. There seems to be an unconscious assumption in these statements that large-scale machine production is economical, and that if agriculture does not adopt such organization it will be because of accepting non-economic values as opposed to economic values.

Back in 1932 Secretary Wilson and I were on the same programme of a conference on land utilization, he to discuss the role of large-scale production in agriculture, and I to discuss the role of the small farm in agriculture. In the present paper he refers to his former beliefs in large-scale production, but also says that he has changed his mind on the question of superiority of the large-scale farm. If he really has, why has he interpreted economic agriculture to be highly technological agriculture in the rest of the paper? It should

be apparent that different degrees of technology, so far as the use of machinery and power are concerned, are economical in different sizes of farms and in regions with differing man-land ratios.

Another phase of Secretary Wilson's discussion that stirred me was his reference to the 'scientific' determination of 'minimum standards of physical welfare'. Let me make clear at the outset that I am wholly in favour of the procedure of determining such standards, and of setting up these standards as goals, and basing programmes of action upon these goals. In my judgement we shall make much more progress on the basis of such goals and programmes than without them—even progress in some directions that later events prove to be 'best', although our goals are wrong some of the time.

But surely he has overstated the scientific nature of these standards. The third of the three diets outlined by Dr. Stiebeling has a large element of luxury foods in it. Diets equally adequate, and equally satisfactory to those consuming them, but costing considerably less in terms of exchange value, can be found widely in use in scores of places in Europe and the British Empire. The possible range in adequate housing is very wide. Is a bathtub a minimum essential? In the part of rural America where I was reared virtually no farm-houses had bathtubs. Moreover, in four families in five the weekly bath was not then an established institution. A change of clothes once a week supplied the total of this form of sanitation. Was this 'adequate'? I am inclined to think it was, until one begins to include the aesthetic in his minimum standards. Mr. Tugwell and the Resettlement Administration surely thought otherwise in 1935. There was a similar difference of opinion about indoor toilets. Is central heating of houses essential to adequacy? Another generation may so decide. How about artificial sunlight, especially in England? Air conditioning in the United States? My limited experience in European homes would lead me to think that satisfactory living is obtained much less expensively in them than in the United States. For one thing, the recreation and social life is more home-made and less commercial. How much and what kind of education is adequate for a farm boy? Surely the scientists of the different countries of the world answer this question very differently.

Those with a continental background will be familiar with a dichotomy of economists and other social scientists into two groups: one group, commonly described as 'pure' scientists, concerning itself only with explaining existing phenomena, or the order and magnitude of change in the past, which considers its task

accomplished when it has discovered the relationships constituting such explanation; the other group concerning itself with developing relationships which furnish a basis for programmes of action, and which commonly goes so far as to indicate the action that needs to be taken. This group of 'purposive' scientists is often criticized by the first. Its exponents are often called 'reformers'.

These scientists, of whom Secretary Wilson speaks, who have been setting up minimum standards belong to the second of these groups. It is to be doubted if any unusual progress has been made recently in the understanding of diets, housing, and the other components of living. What has happened instead is that the purposive scientists have come to the fore again in the period since the World War, as they did in the days of Karl Marx. America's foremost purposive economist was Henry George. To-day we have the modern Marxists of Russia; those who in Germany and Italy are writing a new social science for Nazi-ism and Fascism. In the United States we have our Tugwells, Ezekiels, and Gardiner Meanses. Once in a generation a purposive scientist becomes a great world figure. A thousand others merely write and rant.

It is characteristic of such scientists that they have goals. They have somewhere they want to go—consciously or unconsciously. In these days of planning it is the vogue to set down in definite terms the limits of their objectives. These are our goals or standards. How scientific are they? If the goals are accepted as given, so that the problem becomes one only of means to the end, analysis of relationships between variables can be made that point as surely to the result that will follow from a given course of future action, as the pure scientists can point to the relationship out of which they build their abstract sciences. In practice, however, the purposive scientists are very likely to confuse analysis of ends with analysis of means to ends, or at least to *accept certain ends as scientific desiderata* which in fact have merely been assumed.

The points at issue come to a head in two sentences of Secretary Wilson's on page 47: 'It is reasonable to expect that within this generation the new science of man will be able to describe certain desirable cultural goals with realistic precision. When it does, social or economic planning can be established on a scientific basis.' Any cultural goals which this generation sets up will surely reflect the prevailing philosophy of those who propose them. Nazi Germany is busy setting up a set of cultural goals significantly different from those of the days of the Weimar Republic. The Russia of Stalin has different goals from that of Lenin. President Roosevelt

is struggling to impose some new goals upon the people of my own country.

Indeed, such goals can be *described* with scientific accuracy. But Secretary Wilson surely implies that they have *scientific validity* also. But their validity is only relative to the goals taken or assumed. That these goals are of the particular day and the particular country could not possibly be expressed any more clearly than in the first of the four principles that Secretary Wilson propounds immediately following the foregoing sentences: 'Orthodoxies of all sorts tend to be rationalizations after the fact.'

Again I wish to state, so that there will be no chance of misunderstanding, that I am in favour of setting up goals or standards and basing programmes of action upon them. But we should understand clearly what we are doing and not pretend to a degree of scientific finality that does not exist. We shall then not have the sinking of the heart and the moral let-down that come when the peoples of our countries cast us out and accept another political and social philosophy. If we could only have this understanding, there would not be so many disappointed social reformers writing pathetic autobiographies like that of Lincoln Steffens.

I am reminded in this connexion that in the height of its glory in North Dakota the Non-partisan League published its annual quota of new laws in a little booklet bound in red covers under the title *The New Day in North Dakota*; also of how President Howard of the American Farm Bureau Federation opened his remarks before a gathering of grain-growers at Chicago, called for the purpose of considering a plan of co-operative marketing suggested by Mr. Aaron Sapiro, with the oracular utterance, 'This day marks sun-up for American agriculture.'

Most of us will agree with Secretary Wilson that the introduction of machine methods and modern technology in agricultural production, and with it an increasing degree of commercial production, has created a conflict with old ways of thinking among farm people characteristic of the days when agricultural production was more for use on the farm and less for the market. We will remember how significantly Thorstein Veblen discussed the influence of these new forms of production and marketing upon agriculture as well as industry in his highly significant book *The Theory of Business Enterprise*. No doubt some of the difficulties which the present Agricultural Administration and its predecessor, the Federal Farm Board, have experienced in getting their programmes of production and marketing control accepted by the farm population trace back to

a strong residue of attitudes based upon earlier and less commercial forms of agriculture. Farm people are not sufficiently capitalistic in their thinking to function effectively in a capitalistic society of the sort that such societies have now become. The transition called for is not merely to capitalism as it was described by the classical economists of the last generation, but to the types of capitalistic functioning which we now describe under such names as 'monopolistic competition' and 'imperfect competition'.

Mr. Elmhirst has also dwelt upon this conflict in his opening remarks. I take no exception whatever to any of his statements (except that I wonder if he recognizes that economics also is a social science—a science of human beings living in groups and societies—and if so, what the 'social' in economics as a social science means to him). I would point out, however, that surely the difficulties which a modern capitalistic society encounters in keeping the process of production in operation and moving steadily forward with increasing efficiency and increasing *per capita* consumption are due more to conflicts in the minds of industrial folks than in the minds of agricultural folks. If we could resolve the conflicts in the industrial, financial, and business parts of our society, those in the agricultural part of it would prove to be no great obstacles to progress. Mr. Elmhirst expects to see the generalizations derived from social anthropology studies of primitives applied successfully to the resolution of our present conflicts. It will be very difficult to translate them into terms of modern urban conditions where help is most needed. The method of analogy is very treacherous at the best. Nor have the recent writings of the best cultural anthropologists done much to increase our confidence in them. One would expect that a study of primitives ought to help us to understand modern war if anything modern. But the great Malinowski's attempt at it at the Harvard Tercentenary was surely not encouraging.

I fear that I shall also have to part company somewhat with Secretary Wilson as to the difficulties involved in the absorption of technology by agriculture. It has already been pointed out that the dominant type of farm in the United States, and a large part of western Europe, is neither a self-sufficing farm nor a strictly commercial farm, but one in which an increasing amount of machine production and an increasing application of scientific methods is combined with an improving quality of living by the farm family on the farm. Secretary Wilson makes clear that farm families are adopting the contributions of technology to their living as well as to their production operations. This absorption is surely going to

continue. As it takes place, the attitudes of the farm people will change. No doubt there will be a lag in it in the future, as there has been in the past; but, unless our agricultural leaders become too anxious to bring the millennium within a few years, it can well take place with no more lag than can be allowed for successfully in plans for agricultural improvement. There is much to indicate that the lag will diminish rather than increase.

This leads me to comment on another point lightly touched upon by Secretary Wilson. I quote a sentence: 'On the cultural side, I hope there will be great developments in rural art, literature, religion, and philosophy.' The rural art and literature of the future will be the joint product of farm people living in the country, of industrial people living in the country, and of city people spending more and more of their time in the country. The Country Life Association of America was founded on the principle that life on the farm in the country has certain values and properties which are peculiar to it and which must be preserved. That principle is decaying. Farm people are constantly absorbing an increasing amount of what was formerly called urban culture, and city people, as a result of modern improvements in transportation and the like, are absorbing so much of the country that the two cultures are in rapid process of being largely merged. We shall still have a rural art, but it will be an art of rural landscapes and rural living more than of agricultural occupations.

This does not mean that farm people will espouse the 'high cultures' of our most sophisticated urban civilization. The great bulk of our population, both urban and rural, does not have the intellectual power or imagination to derive pleasure from and contribute to grand opera and other forms of high culture. For the bulk of the people, farm and city alike, there will always be need for a simple proletarian type of culture. As time advances, it will differ less and less as between the farm proletariat and the industrial proletariat. A major cultural need of to-day is to develop means of creating this kind of an art among simple-minded folks themselves, rather than have it provided for them by a venal moving-picture industry, broadcasting, and a comic strip. The attempts at developing community forms of recreation and expression that are exemplified by Mr. Elmhirst's Dartington Hall efforts point the direction in which such cultural development may well take place. The less we think of these as peculiarly agricultural community enterprises, or even peculiarly rural, the more successful will our efforts be.

Secretary Wilson speaks of rural industrial communities and his

faith in them. I do not need to rely on faith in talking about such communities. In a survey which we have been recently making in southern New England, we find that half of the families we thought were those of farmers are rural-industrial families, families living in the farming country on a piece of land that once was a farm, still doing a little farming, but mainly earning their living in a city. Half the townships in Worcester county, Massachusetts, are rural industrial communities. And they are very happy communities. They have developed so fast that our social processes and controls and services have not kept up with them. We do not need to create any more in New England; instead, we must solve the problems of the ones that we have. In the country as a whole, such communities are developing rapidly. Government can help more by helping these than by creating new ones.

Secretary Wilson also speaks of a new trend towards economic security. This trend is best stated in terms of something more fundamental than the current catchword 'security', in terms of a drift towards *not accepting the income and welfare that comes to different social groups in a freely competitive society as a satisfactory measure of proper distribution between them*. Back in the days when a former colleague of mine, Professor T. N. Carver, wrote his *Essays on Social Justice*, it was commonly accepted that what came to an individual in the competitive process, regardless of his inefficiency or very high efficiency, is social justice; and that he has no right to ask for any more, or receive any less. Although this basis of distribution of income may have been an excellent social expedient in certain periods of our development, it no longer is. We know that under such a system all sorts of young people, reared in all sorts of environment, lack opportunity to be as useful to society as they might. We know that other people are so placed that they have large incomes which they are not able to use advantageously to society or even to themselves. As a matter of fact, we long ago began to forsake such a theory of social justice. An outstanding early example of it was free public education. Later we adopted progressive income taxes and inheritance taxes. Our recent social security legislation is the latest large move in this direction. Our rural rehabilitation efforts are in the same class. We will continue in this direction.

The practical questions are how far to go with it at any time, what lines to follow, and what social values to augment. These questions have a definite relation to the old question of the balance between rural and urban living, and the distribution of our population between city and country. If any of you think we are distributed

as we are because of a free play of competitive forces, you do not belong to my school of economic thinking. There are many more people making their living in the city to-day than would be the case if the competitive system operated according to classical theory. But, assuming that we had such a system, should we have a satisfactory working out of social welfare? Surely not.

At the St. Andrews Conference, when the position of agriculture in society came up for discussion, some present took the stand that unless agriculture can prosper in competition in the markets for labour and capital and other resources, and in the markets where its products are sold, it will have to decline, if farm people are not to become 'mere pensioners of industry'. This stand is indefensible on two fronts: first, the competition in question is very far from free competition, and many more people are supported in cities than would be the case if competition were really free; and second, even if it was, we may need to redistribute social income between country and city in terms of social need rather than of current economic contribution to production. If the paper we are discussing had chosen to analyse the relation of 'economic agriculture' to 'rural and social general welfare' in terms of the balance between rural and urban, hackneyed as this topic is, rather than in terms of the balance between self-sufficing and commercial production, it would have come to closer grips with present realities.

Secretary Wilson conceives of several of the departures emphasized in his paper as constituting a 'new science of man'. Mr. Elmhirst has been largely content in his introduction merely to call upon the various groups of social scientists to 'look over the fence' and see what the other groups are doing. This second approach would seem to be the more in keeping with the situation. It is doubtful if any *new* science of man is now developing. All the science mankind has ever had has been the science of man. The science of man began as philosophy and to-day is nothing more than that philosophy, except that it has been differentiated into many compartments and specializations. The whole science of man is so complex that one individual scientist has more than he can do to encompass even one compartment of it. But the whole group of scientists, beginning with the mathematicians and physicists and ending with the super-social scientists and the philosophers, are still engaged in exploiting the one great science of man. Absolutely nothing new in the way of *scope* has been introduced into this science in the last few decades by the cultural anthropologists or by any other group. It is true, however, that the anthropologists have been

making their science more *social* just as have been the geographers and psychologists.

The other thing that has happened, and this particularly in the United States where it was most needed, is that recently certain groups of scientists, social scientists especially, have become conscious of a certain lack of larger perspective in much of what they are doing, and of a lack of team-work among the different branches of social science, and an attempt has been made to bring about a better co-ordination of their efforts. This attempt has mainly taken the form in America of our so-called Social Science Research Council. The groups of social scientists who have principally taken the lead in this movement are: the geographers, many of whom now proudly call themselves *social* or *human* geographers; the historians, who now increasingly look upon themselves as over-all social scientists; and the cultural anthropologists. The economists have been included in this movement, but more with the thought that they needed to be disciplined than that they had anything to contribute. For the most part, they have been under attack from the other groups. These other groups no doubt have been unconsciously animated by their realization that the economists are more nearly able to make their way alone in the world than they are, because the science is upon a more definite basis.

One would naturally assume that the sociologists would be dominant in such a movement. But for the most part they have been pushed to one side. They have been trying to play the role of general co-ordinators for a long time—since Spencer and Comte, and even before—and either have not been too successful at it, or their pretensions along this line have irked the historians and other social scientists. So, around about 1925, the social scientists in the United States started out to have a 'New Deal', led mainly by the three groups mentioned. The economists especially were treated as the conservatives and as 'economic royalists'.

This movement has helped considerably, although it has fallen far short of realizing the hopes of its leaders. More integrating of natural science with social science, and of the social sciences, and of all with philosophy, is now being done. But the problem has not been encompassed as yet. The largest success has been achieved in comprehensive research projects in which several groups of social scientists have collaborated. There are several such in the United States for every one that Mr. Elmhirst can name for England.

This development does not mean, as was implied in some of the discussion of or in Professor Ashby's stimulating paper, 'Agricultural

Economics as Applied Economics', at an earlier Conference, that we are to step out of our accustomed roles as mere economists and include political science, sociology, ethics, and even philosophy in our systems of evaluation. You may remember that I then raised the question as to whether economists alone are competent to analyse the final issues that confront mankind, and suggested that economists confine themselves to the economic valuation process and to choosing between economic alternatives, leaving to some other kinds of scientists or scholars farther up on the scale of co-ordination the task of weighing economic against other values, such as political, social, ethical, aesthetic, religious, and the like.

Some of what Secretary Wilson has said suggests that the *cultural anthropologists* do this co-ordinating. A few cultural anthropologists may know more about more of the sciences that need to be co-ordinated than do economists generally. But surely not many of them. A great geneticist in the United States wrote a book upon the problems of human civilization—and they turned out in his way of thinking to be mostly genetic in their origin and solution. Similarly, a great natural scientist not long ago proposed to solve the problems of education by having every child brought up in a laboratory. The cultural anthropologists have thus far performed mostly according to a similar pattern. If any group of scholars is qualified to do the final evaluating, it should be the philosophers. I marvel greatly that Secretary Wilson does not so proclaim. Or has he become so enamoured of a new love, this cultural anthropology, that he has forsaken his once-beloved philosophy? But even they alone cannot be trusted.

In the field of agriculture, Secretary Wilson has been a powerful factor in progress in this direction in the so-called 'schools of philosophy' that he has worked out with Dr. Tauesch, and in the course of lectures and seminars on 'Democracy and Government' that he organized in the Department of Agriculture last winter. But the outstanding thing about these efforts of Secretary Wilson's is that all the different social scientists and the philosophers have been brought together in it on a team-work basis. In his programme, the science of man is being handled not by any one group of scientists but by all kinds of scientists. And so in my judgement it must always be.

What is the meaning of this for us agricultural economists? When Secretary Wallace took over his tremendous task in 1933, one of his first remarks to me was that, in spite of his many disparaging remarks about them, he was going to have to use a lot of economists.

In the 'New Deal' organization for agriculture he has set up they are almost as numerous as the lawyers, which is saying much. The Social Science Research Council has had to lean heavily upon economists in order to realize what little it has achieved. The first large research project it set up was envisioned by the geographers, and laid out by them and the historians. That was the so-called Pioneer Belts project, which finally became localized largely in Canada. Not one real economist was a member of the committee that framed the project. The committee set up at the University of Minnesota to formulate an Old North-west 'culture area' project had not a single economist upon it. Yet when these projects finally eventuated in some actual research, more economists were called in to help than any other scientists.

This experience makes it clear that the economists have a large role to play in the complete science of man, a powerful contribution to make to the final integration. Economics itself is dominantly a co-ordinating science, but upon a level intermediate between biology and philosophy.

In the final evaluations that are made whenever a society or a nation or an individual lays out, or drifts into, a programme of action, the conscious or unconscious weighing of economic factors, and the use of the economist's methods and tools of analysis, figure in a large way. But of course they are seldom final, no matter how broadly the term economics is defined. On the other hand, the economist has not finished his part when he has made his economic choices. He has to stand by and see what the other social scientists, especially those farther up on the scale of co-ordination, do with his economic evaluations, whether they misinterpret or misuse them. He has to keep watch on the essentially economic evaluations that are constantly being made by other social scientists to see that they meet his tests—especially those made by sociologists and political scientists. He surely needs to watch the philosophers.

So it is with each of the other social scientists. All working together in this way—and likewise the natural scientists—the whole science of man goes forward.

C. A. DAWSON, *Department of Sociology, McGill University, Canada.*

Dr. Booth's paper was a thoughtful and careful summary of the emergence of a social self-consciousness with respect to the agricultural industry. Modern technical advance and specialization with respect to a world market have given rise to problems that have stimulated this self-consciousness and have led to the develop-

ment of a special group of scientists, both inside and outside national and local governments, who are dealing with these problems from the point of view both of research and administration. One of the central points in the paper by Dr. Booth emphasizes the shift from the individual to the group point of view with respect to research and legislation arising out of it. This is perhaps part of the natural life cycle of all our economic groups. Organizations, legal and otherwise, emerge which in time relate the group in status, function, and formal control to other producing groups within the nation, but on an autonomous basis.

In keeping with this is the rising status of the farmer and his family and the farming class to which he belongs. This involves him in reciprocal relations with other groups, and *pari passu* an extension of outside values and outside control to the affairs of the agricultural group. The divisions of labour between, and more extensive relationships with, other classes inevitably mean the extension of social controls with a more public significance.

Dr. Booth did not emphasize organization for farmers by and through leaders of the farm group, although technical agricultural experts are supposed to have a close sympathy with the interests of the farm group. Agriculture, as the paper by Mr. Wilson so well insists, is a culture. It is a way of life. It has its own rationalizations of life, its own set of values, its own philosophy as have other producing groups.

Perhaps there was in Mr. Wilson's paper in particular the attitude that food experts, educators, and perhaps philanthropists from other groups know what is good for the farmer. No doubt in many matters they do, but there are a great many matters in which they do not.

In the long run the agricultural group must pay its own way, under our system at least. We cannot include producing groups among our luxuries, although we come close to that at times for certain of our economic groups. The farm group, too, must pay its way in terms of organization of its own affairs, its institutions, and its mental life. Technical advisers and research men will put their storehouse of knowledge at the disposal of the farm group, to be applied as the latter can and will to meet its own exigencies. This organization of the life and interest of the farm group in the organic sense is a tentative experiment, and very much a natural growth. Only in a limited sense is it susceptible to wholesale planning. Corporate planning, apart from certain regulations which act as a formal protection for this group and the larger public in which it is set, must

be very tentative and flexible on this continent at least. This applies equally to other producing units. Each must find its place and function, drawing as it may on the organized knowledge concerning man and things. Life in any group is too sensitive an affair to be planned in meticulous detail. Let us then be modest in our planning, and careful to utilize and facilitate natural processes whenever and wherever planning for any group is concerned.

Referring to the social sciences, may I insist quietly that men will do their best, as economists of the various types, anthropologists, sociologists, and psychologists, if each sticks to his own particular speciality? The unity of knowledge will accrue inevitably with just a bit of facilitation. When the scientists have done their best for the farm and other groups, there will be still wider areas of life in which the aims of people, what they seek, what they make sacrifices to get, will be defined much more in relation to fashion and art, than the precise findings of the scientists. In his contacts with scientists, representatives of other groups, urban and non-farm, and through the newer devices of communication, the farm group may be expected to formulate the goals of its own existence, in relation to other producing groups to be sure, but as a relatively autonomous functioning economic and social unit. There needs to be a much more systematic and naturalistic understanding of ways of life than now exists, and the direction in which they tend to change, if we are to extend planning on a wider front and outside of times of national emergency. Both authors, I am sure, are fully aware of this aspect of the planning problem. These stimulating and challenging papers form the basis for, I am sure, much further discussion. In this they achieve admirably their intended function in this initial session.

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There appears to be general agreement that it is the task of the future to co-ordinate better than hitherto economic, technological, and social progress, both by the education of men and the improvement of the old institutions. There furthermore appears to be general agreement that we should have permanent institutions which are charged with these functions, and that they should be either managed or at least controlled by the State. But if this is the prevailing opinion, agricultural economists have not only become sociologists but adherents of a very marked sociological school which developed side by side with liberal and Marxist sociology in the nineteenth century, especially in Germany; the basic principle

of this school of thought was termed by Adolf Wagner 'the law of growing activities of the state'.

If we make the whole social body the object of our planning, our knowledge of the nature of this body can never be too thorough. Otherwise there is always the danger that in trying to eliminate earlier maladjustments, we cause new maladjustments, so that the trend of our work is not determined by our ideals but by the unforeseen results of our mistakes. We know far too little about the special form of the connexions between institutions and conceptions in the many paths of life.

The art of handling men as a means of social and economic planning is as yet in its initial stages. It is not enough to have read Le Bon's *Psychologie des Foules*. The most important components of the social order are not the masses but the groups: family, village, profession, party, church, army, nation. Within these groups is enacted the real life of the people, and here they are wiser, better fitted to form opinions, and more independent than when, gathered together in great masses, they listen to an orator, watch a football match, or take part in some celebration. The peasant particularly is not much of a mass man; for he stands in the centre of a microcosm, and that makes for a level head. To-day urban mass alternates between extreme individualism and extreme disregard of individuality. The peasant is better directed to a sane middle path—with a will of his own, but swayed by the traditions of the group in which he lives.

To McDougall belongs the merit of having clearly shown the deciding importance of group sentiments. The relations of institutions to group sentiments explain to us a number of social implications of economic progress in agriculture. If, for instance, we compare the distribution of land, which has scarcely changed in many countries for a hundred years, with the enormous redistributions of wealth in the cities, the effects of the commercial era on the land seem very insignificant. But it was not the trend towards the large-scale enterprise that linked farming to industrial capitalism; the deciding factor was the change of sentiment of the peasant for his homestead, his family, and his village. These sentiments were more deeply changed in the milieu of industrialized areas than in remote mountain districts; race, religious ties, and other factors also played a part. The range of the capitalistic milieu reached the point where the bourgeois was chosen as the ideal of the new type of successful man.

Professor Meyer has given you an outline of the social and

economic alterations of rural life in Germany due to urban influence, and has shown what future tasks arise out of this situation. I will supplement his paper by describing in some detail which problems of social and economic nature have been created by the commercialization of farming in the most important social unit, the family.

The family is the basis of all social life. Its numerical strength and the quality of its members determine the vitality of the social groups and of the nation. In a family with numerous children the tending instincts of the parents and the community of the children bring forth the worthiest sentiments: devotion, discipline, sense of justice, and the willingness to follow ideals. These are the virtues without which no social community can endure. The farm is the place where the peasant must prove his worth, not only as manager of his business but also as leader of men. The assistants of the peasant, his farm hands and servants, usually feel more at home where there is not a single spoilt son, who lords it with or often against his father, but where several children of the peasant work on the farm and submit, as a matter of course, to an authority that is sparingly exercised. In rural communities with a low birth-rate social life shrinks, and all social institutions of education and of mutual aid are endangered. And amongst youth the healthy spirit of competition at work and at play is lacking. A numerous family is therefore not only the source of the biological vitality of a nation; it is also the most important basis of social life in the community, in political and vocational organizations, in the army, and in the nation. But this important basis is no longer strong enough in some regions.

Taking the data of the German census of 1935, I have compared the marriages of independent farmers and peasants up to 1913 with those formed from 1913 to 1923. At the time of the census but few further births could be expected in this group. The following figures show the decline of births in post-War marriages:

0-2 children in	26.1 per cent. of pre-war marriages.
„	46.6 per cent. of post-war marriages.
3-4 children in	27.4 per cent. of pre-war marriages.
„	32.8 per cent. of post-war marriages.
5 and more children in	46.5 per cent. of pre-war marriages.
„	20.6 per cent. of post-war marriages.

The lowest figures are lower than the figures for any population group in towns with less than 100,000 inhabitants, and approach the minimum figures of the biggest cities. In these districts birth

restriction was commenced long before the War. In the pre-War generation here there were fewer marriages with four or more children than in many other parts of Germany in the post-War period. These regions with few children form a connected area on the most fertile Loess soils of Germany, with a splendid transport and market location. Here was the cradle of intensive agriculture in Germany, and here the farm was first transformed into a capitalistic enterprise on the basis of sugar-beet cultivation with modern technology and with keen profit calculations. In this milieu, where the conception of life is narrowed down to economic aspects, the peasant family broke down. The peasant adapted his pattern of life to that of the successful bourgeoisie of the neighbouring industrial cities, but his enterprise was not capable of such expansion as that of the city man in the second half of the nineteenth century. It frequently occurred in city families that the incomes of the sons were many times higher than their fathers'. Although in fact the incomes of the peasants increased, there was a disparity to the disadvantage of the latter. This could be remedied by birth restriction.

The following factor acts in the same direction. In such districts the settled families are drawn into the capitalistic milieu through intermarriage and commercial relations with the urban bourgeoisie, and now at each inheritance the land is appraised at a higher value and is unproductively encumbered. And so we often find the highest debts in the most fertile areas, and thus the opportunity of the children who remain on the land and take over the farm is ever more cramped.

The *Reichserbhofgesetz*, which prohibits that in settlement of legacies the land should be accounted as capital and that payments therefrom should be made to the heirs, has cut the institutional connexions between land property and capitalism. But if an increase of children shall be the result, a change of sentiments must also take place. In Germany we have abolished the class-strife of Marxism, but we still face the heavy task of overcoming the all too materialistic conception of utilitarianism as an ideal of happiness.

In many parts of Germany the old family sentiment is still alive. The heritages were smaller, but, as is proved by the careers of many children leaving the farms, the moral training for life that they received in the clear and simple order of the peasant farm was an excellent gift. In these parts the commercial era had a contrary effect on the family. The enormous expansion of opportunity, thanks to the introduction of technology and of rationally organized enterprises, gave the surplus rural population the possibility of finding a living in the cities. The birth-rate was maintained, whilst

infant mortality rapidly declined. The result was that until the War more children grew up on Germany's peasant farms than ever before.

In a recently investigated rural community of Nether Saxony, the nucleus of which is formed by 88 medium peasant farms of about 20 hectares, in the 110 years from 1696 to 1805 births exceeded deaths by 1,524, but in the 110 years from 1806 to 1915 the surplus was 3,500. In this community the economic chances in life of the peasant child could only be maintained at the same level if the returns of farming were trebled. The opportunities may have been extended about on this scale in the second half of the nineteenth century. But already before the War there was a certain crowding of population on the farms; the population density reached 100 per square kilometre, a very high figure for a purely rural community. The stationary, partly even declining, income of the farm population after the War necessarily caused birth restriction; otherwise the social and economic structure of the rural community must have broken down. Whereas in the third-but-last generation there were 7.2 births per marriage, there are now only slightly over 4.

To me the outcome of this brief review seems to be that wherever, owing to the economic and spiritual ties of a capitalistic order of society, the one- and two-child system has spread, the next aim should be the attainment of families with three or four children. German legislation to-day favours large rural families by a reduction in direct taxation. The significance of this preferential treatment lies less in the improvement of income, for the standard of living still remains considerably lower in the larger family, than in the emphasis placed on the fact that a large family is an essential social honour. In the education of the young generation to these ideals the large families form examples of physical vitality and metaphysical unity. The opinions as to standards of living and everything connected with them are in all human society based on convention. In our modern bourgeois society these standards were determined by the small families in every social section. If we succeed in raising the number of children in these families, we improve a most important relationship of social life to the advantage of the larger families and remove a powerful incentive for small families. We trust that the rise in the birth-rate in Germany in 1933, which shows an increase of a third and fourth child, is a promising step in this direction.

Where the sentiments are still alive in the families, they must be carefully fostered. It is more difficult to reawaken them. For this we need a number of exemplary men in every village. The peasant sentiments of the family are still powerfully influenced by the com-

munal life of the village. Family and village mutually support one another, and both fall if one gives way. It is true that to-day we have a lack of peasants who are not only honourable men and good managers, but who also have the will and the gifts to care for the welfare of the whole village and to be leaders to the others. The situation was different a few generations ago. Here again we meet with an effect of the commercial development. The social anthropologists consider that the talents of the rural families have been lessened by migration to the cities, and that the hereditary qualities have been essentially weakened. That may have had the result that many families, which were formerly of high quality, have dropped to an average level. But it is not universal. The process of eliminative selection has, for instance, been checked wherever, according to a fixed order of inheritance, the farms pass to the eldest or youngest son. Even to-day there is a group of more than normally talented people in every rural social section.

Why are they so rarely prominent? I think the answer is simple. The spread of commercialized farming made far more claims on the attention and time of the peasant. He withdrew from village life into his farm, for here were the new opportunities for enterprising men. To be the advisor and arbitrator in communal affairs, and to watch with authority over the morale of the village, was now less of a social honour than formerly. Our language has registered this change wonderfully well. Formerly, people spoke of the 'first' peasant of the village; that implied character and ideals. Later, one spoke of the 'richest' or 'fattest'; that smacks of money and envy. Thus the *élite*, and the willingness to follow their leadership, are disappearing, less owing to the decline of hereditary qualities than to the disappearance of old group sentiments in the village. By means of education we hope to create the essential basis for a new social order of the village.

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Secretary Wilson in his paper has done an excellent job of summarizing current thinking in Washington on the social phases of the agricultural problem in the United States. National planning for agriculture, according to Secretary Wilson, is a reality and a permanent feature in agricultural organization. National planning represents the most important step taken in effecting economic progress in our generation. It will become the vehicle, according to Mr. Wilson, through which economic change will find its application in modifying economic and social life in American agriculture.

For some of us whose contacts with farming are more direct and intimate, national planning for agriculture has a somewhat different aspect. We recognize that our view may be restricted because of the provincial nature of our environment. When, however, we study at first hand in our own communities the effects of the various programmes, we are forced to the conclusion that national planning for agriculture in the United States has not reached much beyond the stage of planning for plans. A foreign student of American agriculture might easily receive a wrong conception of economic and social change in American agriculture by studying agricultural legislation and current writings and analyses of economists and others engaged in the various programmes of the Federal Government. An agricultural economist who aligns himself with a government action programme, business, or any other 'cause', loses his amateur standing, and his writings should be accepted with this in mind.

If I had been faced with Secretary Wilson's problem in preparing this paper I would most likely have approached it by attempting to show American commercial agriculture in the midst of three great groups of economic change: (1) rapid technical progress, (2) world and national economic disorganization as an aftermath of the War, and (3) the rise of organized labour which has curtailed the outlet for surplus farm population. It would have shown that economic planning as revealed by developments in most countries is not planning for an expedition into areas of greater agricultural development but at best only a planned retreat from commercial farming towards great self-sufficiency and lower standards of life; that national planning as finally revealed by basic action is not the guiding influence in initiating economic progress but rather the result of forces which are already at work.

An attempt would have been made to show that where national planning as conceived at present has been accepted it has hastened and amplified the reversion to agricultural self-sufficiency, and has created at the same time a situation which makes it difficult for a farmer to lift himself much above the economic level of the agricultural labourer.

In the United States all programmes for production control and social reorganization have run aground on the institutions of free ownership of land and the right to transfer and lease land. To date, nothing of any consequence has been done to modify these rights. The refinancing programme of the Farm Credit Administration followed traditional lines.

National planning for agriculture, if it is to become an effective

force in initiating and controlling economic change, must first plan and effect far-reaching abridgements in these rights. A slow evolu-

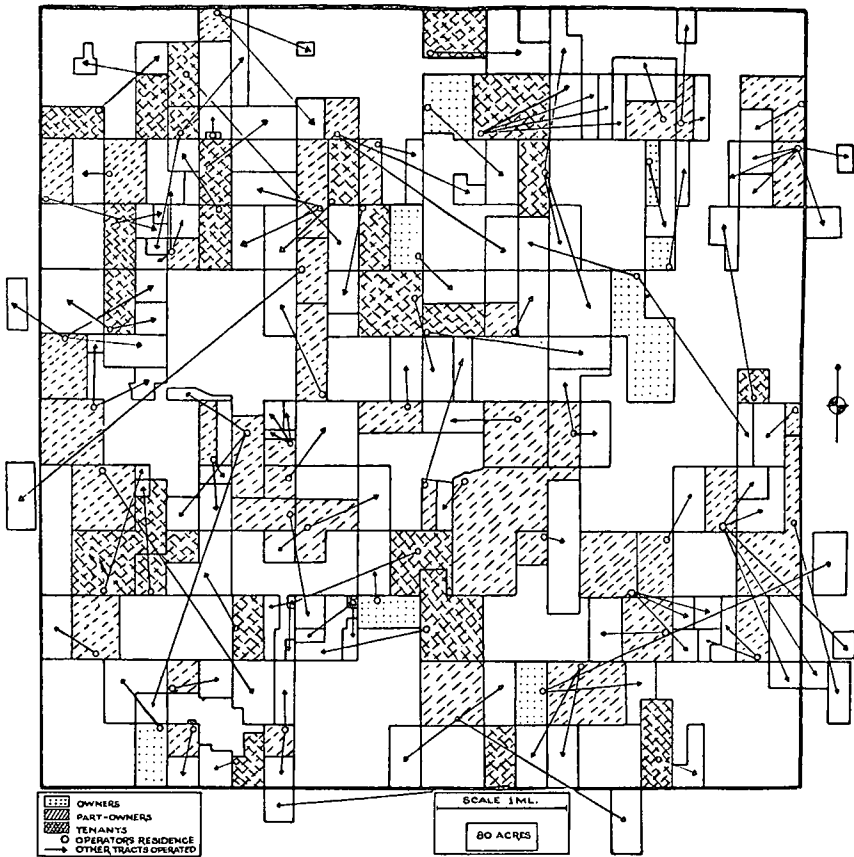


FIGURE 1. FARM OPERATION MAP FOR DEER CREEK TOWNSHIP, CASS COUNTY, INDIANA

Approximately one-half of the farms representing two-thirds of the land in the township are the result of consolidation. This consolidation represents in part a rebuilding of units disrupted by previous subdivision. No data are available to indicate the date and rate at which these changes have taken place.

tion in this direction has apparently been effective since about 1900, but it appears at the present time to be developing in the direction of surrendering to zoning, land use, and soil-conservation functions.

The effect of recent economic change on farm operation in a typical township in central Indiana is shown in Fig. 1. The location

of the operating head-quarters for each farm is shown by a small circle around the farmstead. Arrows point to other tracts operated. The cross hatching differentiates between owners, part owners, and tenants. Farms of only one tract occupy the areas shown in blank.

This township is typical of the eastern corn belt. It contains 36 square miles. From the centre of the township it is about 10 miles distant to two small industrial cities. The roads are all gravelled. The typical farm unit in this township was formerly 80 acres. Because of mechanical and other changes there has been continuous pressure to effect farm consolidation in recent years. In the township there are 223 farmsteads each of which at one time served as head-quarters for a farm unit. In 1937 there were 156 farm operating units, 76 of which consisted of more than one tract. Of the farms of more than one tract, 8 were owners, 22 were tenants, and 46 were part-owners. There were 28 landlords who lived in the township and rented their fields out. Most of these kept some live stock and retained some land for pasture. The remaining 39 farmsteads were occupied by farm labourers and others.

An individual farm consolidation is shown in Fig. 2. The original farm, shown in the circle, was bought in 1922. In 1924 the first tractor was bought, and in 1928 the first combine was bought. From 1928 to 1937 about \$1,000 annually was returned from custom work for neighbours, mostly for use of the combine. In 1931 the 160-acre tract was rented, and a corn-picker, truck, and other power machinery were added. In 1937 the 200-acre tract west of the home farm was bought and is being operated for the first time in 1938.

The farm, now completely^o mechanized, consists of 3 tracts with a total of 520 acres. In 1938 it is being operated with 2 general-purpose tractors with rubber-tires, 2 horses, and 2 hired men. Transportation between tracts is by automobile, truck, or rubber-tired tractor. Approximately 30 round trips per year with tractors are made to each tract. These trips require 5 minutes each way as compared with 45 minutes formerly. While this farmer has been exceptionally successful, his operations illustrate the general trend. It is expected that, in the event of sustained agricultural recovery, farm consolidations will proceed at a rapid rate.

This farmer has participated in Federal Control programmes most of the years they have been in operation, but without much change in operating plans. In Deer Creek township, shown in Fig. 1, participation in federal programmes has been erratic. Farmers have participated when they could do so without much

change in their plans and with a low cost. The better lands where clover and wheat failures were infrequent have participated most regularly. Farmers on poor farms and in weak financial condition

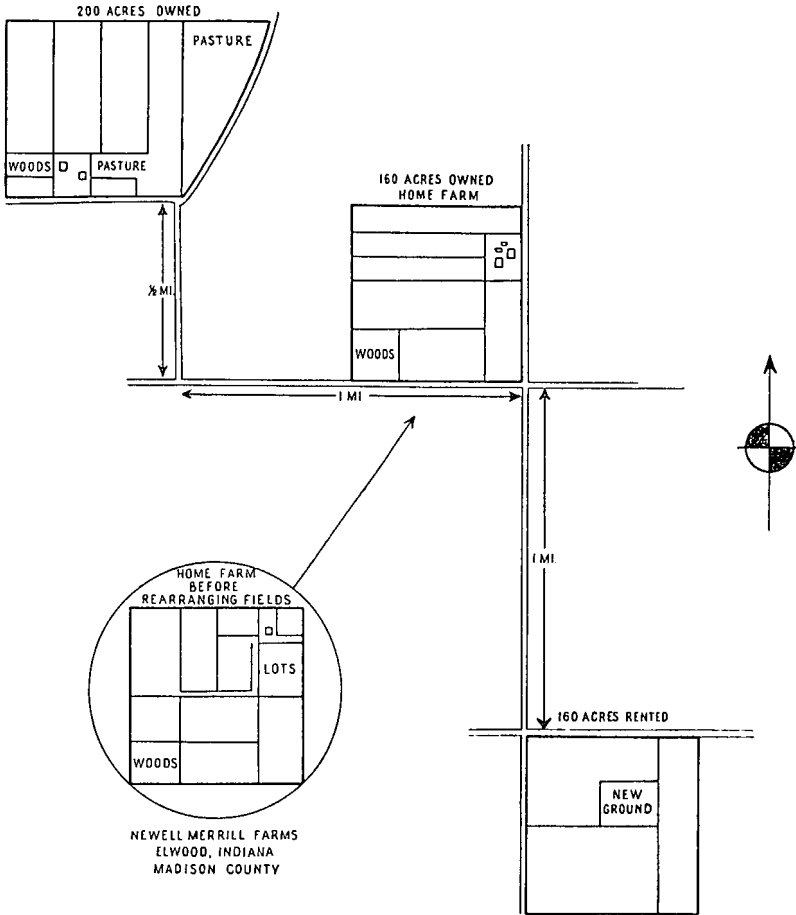


FIGURE 2. FARM LAYOUT FOR A SUCCESSFUL FARM IN CENTRAL INDIANA

The original layout in 1922 is shown in the circle. The layout was changed for tractor-farming in 1922. The 160-acre rented tract was added in 1931 and the 200-acre owned tract was added in 1937.

have found it difficult and expensive to participate except in unusually favourable years. As compared with the effect of developments in farm machinery, crop and live-stock improvement, and transportation, production control and other federal programmes

have been negligible factors in effecting economic and social change in this township.

Throughout this area small industrial cities are developing rapidly. The decentralization of industry which is taking place is apparently the result of the effort of industry to gain access to sources of independent, mechanically skilled, intelligent labourers. Many of these labourers find it possible to live cheaply in the country, not necessarily in new houses built for the purpose, but most likely at home with the farm family or in houses released for occupancy through farm consolidation.

Of the various economic changes effective in shaping current developments in social and economic life in American agriculture, the great unknown factor is the rate and extent of general recovery in national and world economy. Recovery to old levels may not be necessary to preserve present agricultural and social organization in the United States, since many adjustments in debts, taxes, operating costs, and ownership have already been made.

The present national programme for agriculture in the United States reminds one in many ways of the recent noble experiment in prohibition which ended its fifteen-year course in 1933. After fifteen years of national prohibition we found ourselves disillusioned, but a bit more sober. After the dust has settled a little way we may find that we have made a little economic and social progress in agriculture as a result of the national programme. Economic and social progress is always slow and disappointing. We are about to demonstrate again in the United States that general plans and programmes which come down from the top bring disappointment.

County planning, which is the outgrowth of years of extension education with farmers, has developed great possibilities for the future. The chief outcome of this work at present has been to call attention to the weakness of the national programme in its local application. Some time we may learn how to break these great problems into parts, use the accumulated experience of the local communities, and slowly integrate it into some kind of national plan. This process, like education, is too slow for present leadership.

ROLAND D. CRAIG, *Dominion Forest Service, Canada.*

It is not very often that a forester is asked to address a meeting of this kind, but I may say that I was originally an agriculturist, born on a farm and trained in agriculture, and, getting a top-dressing of forestry, became a forest economist. The implications of forestry in agricultural economy are not generally appreciated by either

agriculturists or foresters, but as a matter of fact the interests of these two great primary industries have many contacts which are of social as well as economic importance.

Though this brief discussion of the subject will be devoted almost entirely to the influences of forests and forest operations on agriculture, I would like to point out that forestry derives substantial benefits from its association with agriculture. These include the opening up of the country by roads and other means of transportation required for settlements, the local supply of suitable labour available from the farms for work in the woods, the local supplies of food and fodder required in logging operations, and a most important market for lumber and other forest products.

In the older settled countries of Europe, forestry and agriculture are more closely associated than in the more recently settled countries, such as Canada and the United States, where the tendency has been to consider these two forms of land use as distinct, if not actually antagonistic. In the initial stages of agricultural settlement the forests presented a formidable obstacle to agriculture. The clearing of the land required years of hard work, and it is not surprising that fire, the cheapest and most effective means of removing timber, was used extensively. The wanton destruction of timber resulting from clearing-fires caused the timber-owners to look upon settlement as a menace and incompatible with forest conservation. If the fires had been confined to agricultural lands there would have been little or no ground for complaint, but without control the settlers' fires destroyed vast areas of valuable timber on non-agricultural land as well. I think it can be safely said that in Canada settlers' fires have destroyed the timber on a far greater area of essentially forest land than of agricultural land. Within the last two decades, however, the Provincial governments have generally provided a means of control by requiring settlers to secure permits to burn, and these are issued when the fire hazard is low and certain conditions are complied with. This has greatly reduced, but not entirely eliminated, the loss from this source, for settlers' fires are still second only to camp fires as a cause of forest fires and are responsible for 16 per cent. of all the fires reported.

Another source of conflict between forestry and agriculture has been the settlement of non-agricultural lands, which has resulted in both loss of timber and the failure of many attempts at agricultural development. A careful land classification would have obviated much wasted effort and loss of forest resources.

In practically every country a relatively small proportion of the

land is suitable for profitable agricultural use. In Germany 45 per cent. is considered arable; in the United Kingdom 21.9 per cent.; in Sweden 9.1 per cent.; in Finland 7.3 per cent. is under crop; and in the United States 26.4 per cent. is classified as improved. In Canada it is estimated that 15.8 per cent. of the land is of possible agricultural value, but only 6.1 per cent. is occupied and improved, while one-third of the land area is essentially forest land and the only productive use to which it can be put is the growing of timber.

In most countries in the north temperate zone the forests occupy a prominent place in the national economy. In Canada the forest industries provide about one-tenth of the net value of production, and about one-quarter of the exports of Canadian products consist of wood and paper products. The wealth created by the utilization of the forest resources is shared either directly or indirectly by every industrial class.

In northern European countries farming and forest operations are conducted in closer co-operation than in America, where the latter are usually located at greater distances from settlement. Nevertheless, in Canada logging operations provide employment for a large number of men and horses from the farms, especially from the farms situated in the newer settlements. Except on the Pacific coast, logging is carried on chiefly in the winter when farm work is slack. During the past ten years an average of about 65,000 men have been employed in operations in the woods during the six months April to September, and about 130,000 during October to March. The peak of employment is usually in December when 140,000 are engaged, and in May the number drops to about 50,000. As a matter of fact, owing to the turn-over of labour it is estimated that at least 240,000 men, a large proportion of whom come from the farms, secure a substantial part of their income from work in the woods. In addition it is estimated that in the eastern provinces of Canada about 30,000 horses are required to take out the timber, and a considerable proportion of these are hired from farmers. Local farmers are more readily available and generally more suitable for seasonal and intermittent work of this nature than outside labour, and the money they earn is of great assistance to them.

The logging camps provide an important market for farm products required to feed the men and horses, and the cost of transportation of these products is an item favourable to the local agricultural communities. The farming population can secure supplies of wood for buildings, fences, fuel, and many other purposes

for which wood is required on a farm at much lower cost from adjacent forests than from distant sources of supply.

In the early years of this century the Dominion Government set aside certain wooded areas of sub-marginal agricultural value in the Prairie Provinces as permanent forest reserves for the use of the settlers, and the farmers drive as far as seventy-five miles to get building material, fuel-wood, fence-posts, &c., in these reserves. The value of these forests was so firmly established during the Dominion administration of these lands that since the natural resources were transferred to provincial control in 1930 the Provinces have followed the same policy.

In addition to these direct benefits derived from forest operations, large forest areas have an important influence on climatic conditions and the control of water supplies, which are of vital importance to agriculture. Whether forests induce rainfall or rainfall induces forests is very much like the question of whether the hen precedes the egg or the egg the hen, but the fact remains that there is generally more precipitation in a forested region, and I think it can be safely accepted that the climate in the centres of the large continents would be much drier if it were not for the action of the forests in relaying the moisture evaporated from the surrounding oceans.

There is no doubt that the forests do exert a very important influence in the conservation of the water and its orderly distribution. The snow melts more slowly under the protection from sun and wind afforded by the trees, and the forest soils, due to their humus content and the deep-rooting systems of the trees, are more porous than bare soils. They do not freeze to the same extent, and the snow water has a better chance to seep slowly into the subsoil from which it drains out gradually through springs or maintains the water-table in the surrounding lands. On bare land much of the snow is evaporated directly or blown off into gullies, and when spring comes it melts and runs off quickly before the ground is thawed, causing floods which are frequently disastrous and always wasteful.

The influence of clearing a watershed on the flow of streams and rivers is familiar to any one who has had an opportunity to observe the results over a period of years. On the farm where I was born, in Middlesex County, Ontario, the Au Sable river ran within a stone's throw of our house. In my youth, even in the driest summers, it was a fairly large stream in which we used to swim and fish, and we could row a boat on it for some miles. Now, with the

almost complete clearing of the watershed, there may still be a few swimming-holes in the summer, but there are no boats, and fish have almost entirely disappeared. There is still as much water carried out to Lake Huron, but it nearly all comes down in the spring, flooding the flats and lower lying fields with several feet of water. The lowering of the summer water-level two or more feet in streams such as this undoubtedly lowers the water-table to a similar extent in the surrounding fields.

Soil erosion by both wind and water generally follows too extensive deforestation. In the United States this has become recognized as such a serious economic factor that the Federal Government is providing many millions of dollars for the Soil Conservation Service, in addition to large grants for allied rehabilitation projects. Though vast sums are being spent on engineering works designed to control flood waters, it is becoming recognized that afforestation and improved agricultural methods are the cheapest and most effective means of controlling both floods and erosion.

So far I have discussed the relation of what may be considered commercial forests to agriculture, the influences of which are more or less indirect. The farm wood-lots owned and controlled by the individual farmers are of more immediate and direct concern to the farmer.

It was not until recent years and in the older settlements that the farmers of eastern Canada experienced a shortage of wood for fuel and other purposes. As yet, few farms are entirely without wood-lots, but now in the fully settled districts over-cutting and neglect have reduced the supplies of wood to such an extent that the farmers are forced to use increasing amounts of coal, and steps are being taken to rehabilitate the wood-lots by natural or artificial means.

It is not contended that wood-crops yield as high a return as food-crops on the best soils, but on most farms there is some land which, not being the best for field-crops, can be used to advantage for wood-crops. If not, I think it can be shown that it is economically sound to devote up to 10 per cent. of the farm to the growth of wood for domestic purposes. Although some food-crops are more remunerative than others, diversified agriculture is advisable from an economic standpoint.

The average value of field-crops in Canada during 1931-6 (*1937 Year Book*, p. 237) was \$10.39 per acre, varying from \$6.73 in Saskatchewan to \$17.80 in Ontario and \$33.83 in British Columbia. Taking fuel-wood alone, which is the cheapest but most important

wood-lot product, it is possible by proper silvicultural management to grow from 1 to $1\frac{1}{2}$ cords per acre per annum. Based on a sale value of \$3.78 per cord, such as was placed on fuel-wood by the Canadian Bureau of Statistics during 1931-5, the financial return is very low, but this does not represent the value of the wood grown and used by the farmer himself. It should be valued on the basis of the coal for which he would have to pay cash, if he did not have his own wood.

The heating value of wood as compared with anthracite coal varies with the kind and density of the wood. One standard cord (128 cubic feet, piled) of air-dry wood of the better hardwoods (beech, yellow birch, hard maple, &c.) has a fuel value equivalent to about 83 per cent. of a short ton of anthracite coal; fair hardwoods (ash, elm, soft maple, white birch, &c.) and heavy softwoods (Douglas fir and larch) 66 per cent. of a ton; light hardwoods (poplar, basswood, &c.) and light softwoods (pine, spruce, hemlock, &c.) 50 per cent. of a ton.

The cost of anthracite coal in Ontario, not including the cost of hauling, is about \$15.00 to \$17.00 per ton, and on that basis a cord of air-dry good hardwood has a fuel value of about \$13.25 per cord, and the poorest grade of fuel-wood \$8.00 per cord, the average of all wood being about \$10.50 per cord. A production of one cord of good hardwood per acre per year in Ontario would yield about three-quarters of the average value of field-crops, while a production of $1\frac{1}{2}$ cords per acre would exceed it.

The ordinary farm requires from 10 to 15 cords of wood per annum for heating and cooking, which can be grown continuously on 10 to 15 acres. If this amount of fuel-wood is produced on the farm, it represents a fuel value of from \$100 to \$200. The wood-lot will also supply a considerable amount of wood for poles, stakes, posts, &c., which are always required on a farm. If the growth exceeds the farm requirements, the excess can be sold, as there is always a demand for wood in the cities as well as in the small towns and villages.

The last Canadian census was unfortunately taken for 1930, when prices of wood products were very low, but in that year the forest products, including maple products, produced on farms were valued at \$48,800,000. In 1920, when prices were abnormally high, the value was \$72,000,000. Perhaps a fair average under present conditions would be between 50 and 60 million dollars. In 1930, 40 per cent. of the forest products was sold and 60 per cent. used on the farms. Of the fuel-wood, only 20 per cent. was sold.

Notwithstanding the advances made in specialized agriculture, farmers are generally more independent and self-sufficient than any other industrial class. On the whole their cash resources are small, and to be able to produce, at little or no expense, a necessity such as fuel is an important aid. The maintenance of a wood-lot entails comparatively little expense or effort. No special equipment is required, and the silvicultural treatment consists mainly in intelligent cutting with the objective of favouring the most desirable species and the most vigorous trees, protecting the young growth, and not cutting more than the annual growth. Natural reproduction, especially of hardwoods, can usually be secured in abundance. One essential is that live-stock be excluded, as they not only destroy the young growth but impair the porousness of the soil. If artificial afforestation is required, the planting stock can usually be secured, in Canada and the United States, from government nurseries either free or at a nominal cost.

The first undertaking of the Dominion Forestry Branch, when it was established in 1899, was to provide trees for the planting of shelter-belts on farms in the three prairie provinces. This project, which was continued by the Forestry Branch until the natural resources were transferred to the Provinces in 1930, is now carried on in the Federal Department of Agriculture, and to date about 170 million trees have been distributed. In Ontario, Quebec, and Nova Scotia the Provincial governments have distributed over 200 million trees. Expert advice is given on the care of wood-lots, and a number of demonstration wood-lots have been established. There is no reason for any farmer in Canada not securing the information necessary for the management of his wood-lot.

In Ontario, farm 'woodlands', which are defined as lands having a certain number of trees per acre, depending on the size, are exempt from taxation if they have been set apart by the owner for the sole purpose of fostering the growth of trees, and are not used for grazing live-stock. This exemption may be secured for 10 per cent. of the area of the farm, and not more than 20 acres held under a single ownership. This is a measure which might well be adopted by other governments. In Nova Scotia an officer has been appointed to assist farmers in marketing their forest products as well as to advise them on the treatment of their woodlands.

In some parts of the United States the marketing of forest products from farms and other small forest properties through co-operative agencies is proving very profitable. In this way standards are set, large contracts at favourable prices can be made, and

competition from individual owners who are not in a position to become familiar with the market conditions is eliminated.

The establishment of communal forests, which has long been an important feature of forestry in Europe, is beginning to receive attention in America, and promises to provide a profitable solution for the use of tax delinquent and sub-marginal agricultural lands which occur in many municipalities. This development will undoubtedly advance more rapidly as the success of the undertakings becomes apparent.

So far I have discussed only the economic importance of farmers' wood-lots, but they have also the same influence as the large forests on the conservation of water. It is not contended that the retention of even 10 per cent. of the area in forest will appreciably affect precipitation, but it will have an important influence in holding the snow and retarding the run-off, thereby permitting more moisture to seep into the soil. It will also reduce the drying effect of the wind on the soil and crops and aid considerably in reducing soil-drifting. It has been found in Russia and confirmed on our Canadian prairies that shelter-belts exert an influence on the snow, soil-drifting, and evaporation over a distance of from ten to twenty times the height of the trees.

Trees require large amounts of water for their own use, and where precipitation is scant they may reduce the amount of water available for the adjacent crops; but where there is an excess of the tree's requirements, stated in some cases to be about sixteen inches, shelter-belts and wood-lots have a beneficial influence.

One must not overlook the aesthetic influence of the scattered woodlands in a farming country. Agriculture should be more than an occupation providing food and raiment to the rest of the world for a minimum subsistence. It should be a mode of living which would attract those who appreciate the beauties of nature and the comfort and security of homes. What could be less attractive than a broad expanse of bare land with a group of naked buildings sticking up here and there? The lack of trees was felt by those who came from wooded homes in the east or from other lands and settled on the prairies. The extent to which shelter-belts have been planted around the homesteads on the Canadian prairies indicates an appreciation of the importance of trees in the establishment of permanent homes. Many settlers in the western prairies have told me that plantations around their buildings have added as much as \$1,000 to the sale value of their farms and that the comfort and pleasure they derived from them were worth far more than that.

It has been the practice in clearing the farms in wooded country to leave the wood-lots at the back of the farms. This is a mistake from the standpoint of the beauty of the landscape. Patches of woods along the roads broken by open vistas of fertile fields lend a charm to rural scenery, which not only adds to the pleasure of those who live in the country, but is attractive to those who only drive along the roads.

In conclusion, may I say that when forestry gets beyond the stage of exploitation of virgin stands and settles down to silviculture on a permanent crop-producing basis, the relation with agriculture will be more intimate. Foresters look forward to the time when farming settlements will be established on the better soils throughout the forests, and these settlements will supply the greater part of the labour for the woods. There are perhaps no two industries that can work together to greater advantage. They are both concerned with the growing and harvesting of renewable crops, and their activities are for the most part seasonal and dovetail with little overlap. Their differences only make them more compatible.

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If I may advert first to Dr. Booth's paper I should like to commend him for the effort he has made to provide some historical perspective for to-day's topic. He reminds us forcibly how recently agricultural economics in the New World has emerged—if it has yet emerged—from the stage of predominant emphasis on the enterpriser or entrepreneur and the assumption that whatever promotes the financial profit of the entrepreneur—whether he be operating owner, tenant, 'suitcase farmer', or supervising landlord, planter, big farmer, or little farmer—redounds to national or social welfare. One may derive from Dr. Booth's paper—though not explicitly stated—that we should draw a distinction between collective action, to promote the profit of entrepreneurs, such as legislation relative to rural credit, market standards, transport facilities, rates, &c., on the one hand, and, on the other hand, policies aimed primarily at the well-being of all those engaged in agriculture—whether as owner operators, hired labourers, or tenants; and beyond all that, the bearing of such policies on the general social health of the nation.

In the United States, for example, the New Deal has suddenly precipitated the agricultural economist into this stage; and with a few exceptions here and there one does not discern that there has developed any well-defined philosophy or point of departure. Few of

us, I believe, have a clear reference in our writings and activities as to the following questions:

Are we seeking the welfare of farmer entrepreneurs (*a*) because they should be a preferred group in the nation or in society as a whole, and if so, why; or (*b*) because their prosperity is particularly influential on the prosperity of other groups irrespective of the sacrifice these groups are called upon to make to the promotion of farmer well-being; or (*c*) because the prosperity of farmer entrepreneurs will contribute more to social welfare than the prosperity of other groups, including that of farm labourers or the more disadvantaged classes of tenants? Or is our point of reference the promotion of nationalistic objectives in the newer European sense, or the measurement of welfare in accordance with some democratic standard of the majority of citizens, or again the more universal outlook of welfare of mankind as a whole?

Mr. Wilson's paper suggests perhaps less pointedly how far we have yet to go to achieve philosophic clarity on these and other questions. Undoubtedly, we agricultural economists in the New World have been much too busy with the rapidly changing day-by-day developments to provide ourselves with even an embryonic philosophic framework.

To return a moment to Dr. Booth's paper, I would criticize his over-simplification of his historical sequences. He tends to imply that commercial farming is a comparatively recent evolutionary stage that has emerged out of pioneer farming. As a matter of fact, predominantly commercial agriculture developed in portions of the South, for instance, based on the tobacco industry, early in the seventeenth century. The United States as a whole did not emerge at any particular period from a pioneer economy to a commercial economy. Taking the nation as a whole, it is true, there has been a gradual recession of the pioneer or self-sufficing phase and an increasing predominance of commercialism. Actually the emergence into commercialism occurred at widely differing intervals of time in different geographic areas as affected by location and the development of transport facilities. By the same token, the emergence of concern with collective policies to promote the farmer's financial well-being, associated generally with the development of commercial agriculture, is by no means so recent as Dr. Booth implies. In early decades of the seventeenth century one finds the tobacco farmers of Virginia developing price-fixing and production control and market quota measures that remind us of recently developed policies. Elaborate measures for standardization of quality, the character of containers,

and market inspection prevailed during the predominance of mercantilism both in Europe and America. The earlier examples cited by Dr. Booth represent mainly the first timid steps toward social control that followed the period when *laissez-faire* had swept away the comparatively intensive controls instituted under mercantilism.

I would also question the implication in Dr. Booth's paper that extreme specialization in production and the accompanying problems of instability and other disadvantages are comparatively recent phenomena. In the South, as well as in certain other parts of the United States, the one-crop system traces far back to the early years of our economic history. In a number of areas in the United States extreme specialization in market products was succeeded by a greater degree of diversification.

Finally I would submit that Dr. Booth's generalization, that European countries arrived relatively early at the development of an *Agrarpolitik* because they had to deal with 'the infirmities of age', while the New World countries have arrived rather late at the consideration of collective, as distinguished from merely enterprise, economics, because they have had to deal mainly with 'the growing pains of youth', exhibits the perils of metaphorical generalization. Actually the emergence of collective policy, as Dr. Booth indicated earlier in his paper, was more a matter of the stage of commercialism in agriculture than of historical age. A number of the countries of Europe passed out of the stage of predominantly self-sufficing agriculture relatively late, even later than was the case in many parts of the New World. 'When the economist did finally appear', to quote Dr. Booth, he may have 'found an established society', but, in most countries, it was a rural society emerging more or less rapidly into the stage of commercial agriculture and specialization in production with all the accompanying problems and necessity for collective action that have characterized the evolution of New World agriculture in even greater degree. Because of their earlier development of commercialism and its greater emphasis, the United States at least has been in the van in the formulation of collective agricultural policies.

Again, in the United States some of the most significant of the recently developed New World policies, such as the soil-erosion programme, the land-purchase programme, and the rehabilitation programme, represent attempts to repair the serious mistakes of our youthful stages of development rather than to cope with the problems of a static and decrepit rural civilization. If we have old age in our New World rural economy, it is the premature age superinduced by the excesses of youth, such as soil wastage and ill-

conceived policies of land disposal and tenure; and far from entering the comfortable complacency of an established rural civilization, the vast and sudden elaboration of new social policies reflects the attempt to cope with the excessive maladjustments that were generated in the stage of pioneering and the *laissez-faire* policies associated with the pioneer stage.

Because of my almost complete agreement with Mr. Wilson's point of view, my comments on his paper take the form less of divergence of view than of an attempt to elaborate some of his points, which he could have done better than I, if time had been available.

In recognizing that rural economy falls into two extreme patterns—self-sufficiency and commercialism—with many intermediate and indeterminate stages, one becomes conscious of the poverty of our terminology and the indefiniteness of our concepts. While the nature and the economic and social significance of the extremes have long been more or less understood, it is fairly clear that the intermediate stages are, and long have been, probably more prevalent than the extremes and more significant as economic and social objectives in rural organization. Yet we have not developed any adequate terminology to designate these various intermediate stages or achieved any satisfactory progress in their definition. Still less have we made progress in appraising them in economic and social terms. The economic disadvantages of extreme self-sufficiency are apparent. Mr. Wilson has put us in his debt by emphasizing the offsetting social values and, on the other hand, the economic and social disadvantages of extreme commercialism. But neither he nor probably any of us is so overcome by 'nostalgia for the Golden Age', as he well puts it, that we would advocate a complete return to extreme self-sufficiency. Most of us are likely to prefer to trust in some of the intermediate stages. But what stage? At this point we become incoherent for lack of definiteness in terminology and in conception. How much and what kinds of self-sufficiency are economically efficient and socially healthful? Outside of a few calculations as to percentages of income derived from commercial production and production for use we have done little to define or designate qualitatively these intermediate stages. We have done even less in determining the economic feasibility and social advantages of different types of production for use. I have a definite conviction, which I have voiced on another occasion, that the application of science to the problems of production for use, in the same degree that we have applied science to the problems of production for sale, will

point the way to a very much greater degree of individual and community self-sufficiency than most of us have considered possible.

It is a hopeful sign that the two New World economists whose papers opened this session have recognized economic and social disadvantages in extreme commercialism. It marks the passing of the intellectual myopia which, because obsessed by the obvious operating unit efficiencies of the extreme types of commercial production, failed to recognize their glaring inefficiencies when viewed in broad social terms. Now that these scales are falling from our eyes, our profession is about to enter upon distinctly new pathways of progress.

Agricultural economists and sociologists in the New World no less than in Europe are confronted with a number of dilemmas, which may well be given categorical formulation as follows:

1. Commercial specialized agricultural production is more efficient than predominantly self-sufficing agriculture per unit of labour employed and probably per composite unit of labour and capital, and will be unless new types of technical and institutional progress can promote a greater degree of efficiency in production for use.
2. By virtue of the inelastic demand for farm products, it follows that a smaller proportion of the population can find a means of livelihood in agricultural employment in commercial production. Consequently a larger proportion of the population must live in cities, with the social disadvantages widely recognized, unless non-agricultural industry can move to the country-side.
3. In the modern economic world non-agricultural employment appears incapable under present institutional arrangements of absorbing the steadily increasing numbers released by progress in agricultural efficiency. According to the estimates quoted by Mr. Wilson, nearly half of the farm operators of the United States produce only 11 per cent. of the commercial product. Potentially the major portion of this segment of the farm population could be spared to engage in non-agricultural production if there were an outlet for their services. Inability to absorb them means persistence of low standards of living, a heavy relief burden, the utilization of lands ill-adapted to cultivation with consequent impairment of natural resources.
4. In production for market we encounter the antithetical relationship between abundance and profit which necessitates restrictive policies applied both to production and sale.

5. The profit of the agricultural entrepreneur, as in other types of production for sale, is in conflict at important points with the welfare of the other classes of agricultural workers, and policies which promote the welfare of the entrepreneur in agriculture are often antithetical to the welfare of farm labourers and tenants.
6. As the economic world is now organized, commercial agricultural production appears inconsistent with economic and social stability either for the entrepreneur or his employees.
7. The lack of close correlation between material income and happiness, which has from time immemorial been emphasized by prophet and philosopher, cannot be lost sight of by the rural economist in attempting to appraise the relative merits of the self-sufficing and commercial types of economy.

In conclusion, I am convinced that the social imperative presented by these dilemmas—if I may call them so—will compel agricultural economists to reorient their field of work in the direction of a more searching examination of the economic and social possibilities of self-sufficiency (or production for use), and especially the various intermediate stages between extreme self-sufficiency and extreme commercialism.

CARL E. LADD, *Dean of Agriculture, Cornell University, U.S.A.*

Our discussion to-day is not primarily of economic depressions and their causes. We are rather evaluating present economic progress, assuming a continued progress, and attempting to measure the effects and the value of that progress in terms of the social welfare of the people. We should go further than this; if possible define our social objectives; and determine whether economic programmes should be modified or strengthened to aid in reaching these social objectives. It is highly encouraging that economists are attempting to challenge their programmes from this point of view.

Secretary Wilson has called attention to the world-wide confusion resulting from the impact of science and technology on society. Overproduction is so apparent in agriculture and manufactures that many people immediately conclude (Secretary Wilson does not do so) that there must be a long-time restriction on new technological developments which increase the productive capacity of men. This is a defeatist attitude. If society is efficiently organized for distribution, it should be impossible for people to produce more than they can consume. Certainly we all desire more things. Certainly more goods can be produced. The great problem is diversification and

balancing of production and efficient distribution. It seems to me that we are on the verge of great progress in the field of distribution. This is the great problem, the great challenge of the present and the immediate future. Science ought to be as effective in solving these problems as it has been in solving the problems of production.

What are some of the characteristics of current economic changes in agriculture? Among these should be listed:

- (a) Increasing crop and animal production.
- (b) Mechanization which requires much less work done in the fields and in the barns and much more agricultural work done in factories, service stations, oil-fields, and electric utility plants. The true increase in production per man is nowhere nearly so great as is generally believed, but there is a great change in the location of agricultural workers as a result of mechanization.
- (c) Much more efficient use of man labour.
- (d) An approaching clash between a few, large, mechanized farms with labour standards, and many small owner-occupiers willing to work long hours under sub-standard labour conditions.

Secretary Wilson has well pointed out the competition between these large commercial farms and the smaller self-sufficient farms, and the advantages that have come to the smaller farms through the use of small rubber-tired farm equipment. Another very important element is the development of successful purchasing and marketing co-operatives which give the small farmer the advantages in buying and selling available to the larger farmer.

In this discussion of large and small farms we should not let our theoretical discussion carry us too far from the facts of the case. There are relatively few farms in the United States that can be classed as larger than family-sized farms, and, with the exception of a few specialized enterprises, I doubt any rapid increase in the relative importance of this group. The two classes, commercial and self-sufficient farms, are both for the main part included in family-sized farms, and there is nowhere that clean-cut distinction found, for instance, between 'small holdings' and 'farms' in England. For years there has been a tendency for the family-sized farm to grow larger. All farm management studies support this as sound, and we should anticipate further changes along this line.

With a greater degree of commercialization on farms and larger farm units there should arise a more stable and permanent farm labourer class. Little thought is being given to the social problems of this group. From the standpoint of the community their needs

will be met in the same way as the needs of the farmers. Good schools, hospitals, churches, recreational opportunities are, of course, as available for labourers as for any other group. The proper housing and home facilities for farm labourers are, so far as I know, receiving no attention from any one. Here is a glaring need in America and an instance where America is much behind European countries.

Secretary Wilson has very well stated the problem of the large groups of people in certain areas who have insufficient land, capital, and income. The share-croppers of the southern states are typical of this group. Agriculture as a whole cannot shut its eyes to this economic and social problem.

The most remarkable characteristic of the present economic depression is not its size and severity but rather a universal and world-wide acceptance of the responsibility of governments to do something to alleviate the sufferings of human beings, to maintain living standards, to prevent the mental and moral degeneration that comes from inability to continue activity in one's chosen field, and in general to protect and maintain the social well-being of the people.

Here a new force is at work. Its efforts will sometimes be wise and sometimes otherwise. But this new force presents a great opportunity to economists and sociologists, and, if our science is sound and our application is practical, a vast new opportunity opens up for our efforts.