



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

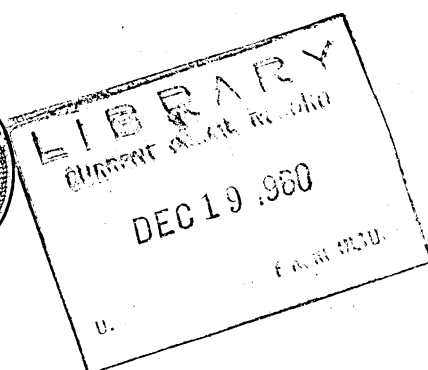
281.8
In 2

THE INDIAN JOURNAL OF AGRICULTURAL ECONOMICS

SPECIAL NUMBER

IN HONOUR OF

SHRI MANILAL B. NANAVATI



INDIAN SOCIETY OF AGRICULTURAL ECONOMICS
DECEMBER 1959

EDITORIAL BOARD

Prof. M. L. Dantwala } *Joint Editors*
Dr. M. B. Desai }

Shri V. M. Jakhade

Shri G. B. Kulkarni

Dr. G. D. Agrawal

Rs. 6.50

The copyright and all rights of reproduction and translation of articles, book reviews and correspondence published in THE INDIAN JOURNAL OF AGRICULTURAL ECONOMICS are reserved by the Society. Application for permission to translate or reproduce any material contained in it should be made to the Honorary Secretary, The Indian Society of Agricultural Economics, 46-48, Esplanade Mansions, Mahatma Gandhi Road, Fort, Bombay-1.

THE INDIAN JOURNAL OF AGRICULTURAL ECONOMICS

Vol. XIV

OCTOBER—DECEMBER 1959

No. 4

CONTENTS

	Page
Sir Manilal : A Tribute <i>J. J. Anjaria</i>	1
Shri Manilal B. Nanavati—A Constructive Thinker <i>P. G. Shah</i>	4
The Indian Society of Agricultural Economics: Research Programme and Publications—Retrospect	12
The Agricultural Economist and Rural Development <i>L. K. Elmhirst</i>	23
Management Assistance in Farming <i>Sherman E. Johnson</i>	27
A Ceiling on Holding Agricultural Land in India <i>D. R. Gadgil</i>	33
A New Era for Agriculture in Economic Growth <i>Theodore W. Schultz</i>	37
Indian Agricultural Economics <i>D. G. Karve</i>	44
Modern Agriculture in Small Holdings: Experiences of Western Germany <i>Otto Schiller</i>	47
Some Observations on the Essentials of a Price Policy for Foodgrains in India <i>B. K. Madan</i>	54
Water for Italy's Hill Land <i>Giuseppe Medici</i>	61
Agricultural Economics Research and Economic Planning in India <i>S. R. Sen</i>	66
Farm Management Research Needs in American Agriculture <i>H. L. Stewart</i>	73
Impact of Redistribution and Pooling of Land on Agrarian Structure and Efficiency of Resource Use <i>M. L. Dantwala</i>	80
Food Consumption As a Production Factor <i>Michel Cepede</i>	87
Role of Middlemen and Co-operatives in the Production and Marketing of Fish <i>M. B. Desai and P. R. Baichwal</i>	91
Farm Resource Productivity in West U.P. <i>G. D. Agrawal and W. J. Foreman</i>	115



Shri Manilal B. Nanavati

MODERN AGRICULTURE IN SMALL HOLDINGS: EXPERIENCES OF WESTERN GERMANY

Otto Schiller

The opinion is widespread that the advantages of modern techniques can be used in the right way only in large production units. On the long run, so it is believed, small units, like the small holdings prevailing in agriculture have no chance to be preserved in the age of technical and scientific progress. For the time being, however, one can observe that the countries with the highest intensity of land utilization, *i.e.*, the highest yields per acre, are not characterized by prevailing large-scale farms but are countries where small and middle-sized farms prevail. One of the countries with high yields per acre and a small percentage of large-scale farms is the Federal Republic of Germany. The agrarian structure of this country seems to be a good example to demonstrate in how far the smallness of farms represents an obstacle for agricultural progress and in how far it is possible in small farms also to raise the level of agricultural techniques to modern standards.

In Western Germany the average size of all holdings over 1.25 acres in the last two decades has increased from 17.5 acres to 18.75 acres. In the meantime the total number of holdings decreased from 19 to 17 lakhs. A similar development can also be observed in some other countries, as for example the U.S.A. and Sweden. This seems to confirm the statement that in the technical age the natural trend of development is directed towards the dissolution of small holdings and towards larger units of production. Detailed examination shows, however, that the development is not moving one-sidedly in this direction. In Western Germany the typical family farms, *i.e.*, farms of 25 to 125 acres in the last 2 decades have augmented their share in the agricultural area from 49.5 to 54.4 per cent. But in the same period not only the share of the peasant farms below this size, *viz.*, from 12½ to 25 acres, decreased, but the share of the peasant farms above this size, *viz.*, from 125 to 250 acres, decreased as well. This means that a certain number of family farms with a size insufficient for full subsistence have been enlarged to a sufficient size or have been dissolved, while during the same time a number of peasant farms too large to be managed without hired labour have been reduced in size correspondingly.

A similar picture is shown by the very small farms which are to be classified not as peasant farms but as part-time farms. Their share is decreasing in all groups but to the largest extent in a higher group of 5 to 12½ acres. These are holdings too small for a family farm but too large for part-time farming. Many of them are reduced to a size allowing part-time farming in the spare time without excessive physical demand. Also in the smallest group if 2½ acres and below the tendency is not directed one-sidedly towards a reduction in the total number and to an enlargement in size. This is also shown by the fact that 60,000 new

part-time farms have been established in Western Germany in the post-war period by way of settlement.

It is significant that also the number of large-scale farms of over 250 acres (landlord's farms) has decreased in Western Germany in the last two decades, namely, from 3,500 to 2,800 farms. Their share in the agricultural area went down from 4.8 to 3.7 per cent. This reduction has been caused not only by measures of land reform carried out immediately after the war, but by the difficulties in getting hired labour as well as by other reasons recommending a smaller size of farms.

The natural trend of development therefore indicates two groups of farms which probably also in the future will be of fundamental importance for agriculture in Western Germany, namely, the family farm of middle size and the part-time farm of small size. There is still a third group of farms which also have a chance to be preserved, namely, the farms of intensive cultivation with special crops such as vegetables, grapes, tobacco, etc. In this group a size of $2\frac{1}{2}$ to 10 acres is sufficient for full subsistence. The question is in how far these three types of farms, i.e., the family farm of 25—125 acres, the intensive farm of $2\frac{1}{2}$ —10 acres, and the part-time farm of $2\frac{1}{2}$ acres and below, already are open to agricultural progress or offer a chance to be opened to it in the future.

Agriculture in Western Germany is characterized by the owner who himself cultivates his land working physically on it. Approximately 80 per cent of the agricultural area is operated by the owners of land and only 20 per cent of the area is under tenancy. Most of the big landowners (landlords) are also operating their land themselves although without physical work and only a small number of them are absentees. There are also tenants operating large or small farms on the basis of long-term leases which are valid over a period of 9, 12 or 18 years and often are renewed after expiration. There also exists another form of tenancy, namely, peasant-owners taking additional plots of land on lease for cultivation. Especially in the regions where we have to do with the customary subdivision of holdings by inheritance and with fragmentation of land, this form of tenancy plays an important role for the purpose to adjust the size of a farm to the changing working capacity of the holder's family. It is the aim of agrarian policy to preserve and to strengthen the sense of ownership in peasantry. But it is also its aim not to impede tenancy relations in agriculture but to direct them by certain control measures along appropriate lines.

According to the idea accepted in Western Germany, a certain number of large-scale farms is indispensable for an appropriate agrarian structure to contribute to the promotion of agricultural progress, especially with regard to plant breeding, propagation of pure seeds, animal breeding and introduction of technical innovations. For these purposes, it is true, a relatively small number of large-scale farms may suffice. It is not believed that for the sake of agricultural progress it would be desirable to strive for a complete transition of agriculture to large-scale farming.

Just as in other countries of Western Europe, in Western Germany, too, the peasant family farm is considered to be the backbone of an appropriate agra-

rian structure, for which the decisive criteria are not only the highest economic efficiency, but also the suitability to provide an independent and psychologically satisfying life for the largest possible number of agriculturists. The more are the reasons mainly based on factors outside of the economic sphere which calls for the maintenance and promotion of small part-time farms. In some parts of Germany the economic development of the last 150 years has resulted in a far-reaching integration between industry and agriculture. A decentralized industry has penetrated into rural areas. The part-time farmer who permanently or temporarily is employed outside agriculture but is preserving his personal attachment to an inherited piece of land is a sociological phenomenon which must be appreciated for reasons of public health, social peace, and human nature. The economic reasons which may be quoted in favour of large-scale farming are not so weighty that in the long-run the maintenance of peasant family farms and of part-time farms would be made dubious.

German experience has shown that even middle-sized and small farms can be raised to a modern level of production techniques under the following conditions:

- (1) Structural deficiencies must be eliminated;
- (2) Farm machinery must be developed striving not only at the greatest possible efficiency but also considering the special requirements of small-scale farming;
- (3) Small farms must be assisted and promoted by a well-developed co-operative movement.

IMPROVEMENT OF AGRARIAN STRUCTURE

Structural deficiencies inherent to German agriculture from the past, actually are very great and by far not yet overcome. Already in former times some measures for improvement have been carried out. Nowadays, however, measures for the improvement of agrarian structure are the main concern of West Germany's agrarian policy. The most important one in this connection is land consolidation. Subdivision of holdings by inheritance is the traditional custom in approximately one-fourth of the German villages. In these villages the fragmentation of land has reached a high degree. There are regions where holdings exist with more than hundred plots of land. There are villages where the average size of the plots of land is less than one-fourth of an acre. It is estimated that out of the total agricultural area of Western Germany (36 million acres), approximately 15 million acres are yet to be consolidated. In the last few years about one-half million acres have been consolidated annually, with a total of 3.8 million acres in the post-war period. Since consolidation of land has to be combined with the construction of field roads and water channels, the expenditures are rather high, viz., 200—350 marks per acre on an average (1 mark equivalent to Rs. 1.12.)

In Germany even in former times, resettlement measures for the establishment of new peasant farms have played an important role for the improvement of the agrarian structure. Now-a-days resettlement measures have gained special importance due to the fact that after the war more than 70 lakhs of refugees from

the East had to be rehabilitated, 35 per cent coming from agriculture. In the course of the last 10 years, another 20 lakhs of refugees came from Eastern Germany. Western Germany is densely populated, so that there is not much land suited for reclamation. Only a small part of the land for resettlement purposes could be gained by reclamation. Mostly land already utilised had to be made available for the purpose. In new settlements the form of hamlets or dispersed single farms is given preference over the form of villages.

The peasant family farm is also the main objective in settlement activities. Under German conditions a family farm for full subsistence has a size of 25—50 acres. In the first few years after the war, it was the rule not to exceed a certain minimum of land allocation to the settlers in order to rehabilitate as many families as possible. Now-a-days preference is given to settlements a little over the minimum size. But there are also very small farmsteads given to settlers, namely, for part-time farming or for intensive cultivation, especially in horticulture. In the post-war period approximately 8,300 new peasant farmsteads and 60,000 part-time farms have been established and 48,000 refugees have been rehabilitated in existing farmsteads altogether with about 4 lakhs family members. Available land has further been used for the enlargement of small farms to the size of a family farm securing full subsistence. In settlement activities also, preference is given to ownership rather than to tenancy. After a period of 3 years of probation the settlers are acquiring ownership rights on the allotted land.

Experience has shown that in large villages as they frequently exist in Germany, rationalization of peasant farmsteads and consolidation of land is an extremely difficult task. In the last few years land consolidation increasingly has been combined, therefore, with the transfer of a number of farmsteads out of the village to new places somewhere in the village area. This way, too, new hamlets or dispersed farmsteads have been created which are better suited for progressive farming than farmsteads in narrow villages. In the last 3 years alone, about 3,000 peasant farmsteads have thus been re-established outside the villages. It may be expected that in the future this measure will gain even more importance and will change and improve the set-up of German villages.

MECHANIZATION OF SMALL HOLDINGS

In the beginning stage of mechanization, also in Germany it was believed that mechanical implements can be used only in large-scale farms. The first large agricultural machines, the steam-plough and the motorplough, introduced after World War I in German agriculture were, as a rule, confined to landlord's farms of more than 250 acres in size. The transition to pneumatic tyres and handier types made it possible also to start mechanization of the larger peasant farms. The next step was that the manufacturers of agricultural machinery systematically began to take into consideration the requirements of the typical peasant farm and to design new types for the purpose. At first a so-called peasant-tractor has been constructed, then followed a small one and finally a midget tractor with one axle. Thus the process of mechanization proceeded more and more to farms of small and smaller size. It may be said today that in most cases the small size of a farm does not represent a serious obstacle for the use of modern machinery. According to German experiences even a tractor of middle size, *i.e.*, one with

20—25 H.P., can still be utilised to a sufficient degree of efficiency, if the individual plot of land has a size of at least $1\frac{1}{2}$ acres. The idea that for the employment of a tractor the fields should be of at least 10, but if possible even 100 acres or more, obviously is not justified.

It must also be considered that under the conditions of the peasant farm it is not only the mechanization of farming processes which counts, but that also the mechanization and rationalization of working processes in the house, the farm-yard and the stable are of the same importance. The conditions for the mechanization of these processes, in small farms, however, are not very different from those in large farms.

In spite of the fact that the agrarian structure of Western Germany is characterized by middle-sized and small farms, mechanization of agriculture in the post-war period has made rapid progress, not seriously impeded by the factor of size for which obviously there is no strict lower limitation. One can observe in Germany that even the largest of agricultural machines, the combine-thresher, frequently is used on a hired basis in part-time farms of not more than 5 acres consisting of small plots of land. After the war there were only about 50,000 tractors in Western Germany. At present there are more than 700,000 tractors and 25,000 combine-threshers. Despite the smallness of the farms Western Germany has reached a stage of mechanization of 35 H.P. per 100 acres of agricultural land which is much more than in most other countries including the Soviet Union where agriculture consists only of very large farms. Small tractors of 10—15 H.P. and the one-axle-tractor of 6—8 H.P. are being used in great numbers in Western Germany.

CO-OPERATIVE PROMOTION OF SMALL HOLDINGS

When hundred years ago Raiffeisen started the rural co-operative movement in Germany, many farmers were hopelessly indebted to private moneylenders taking advantage of their economic weakness. The Raiffeisen-principle of self-help at first brought about a quick development of rural credit societies. But co-operative activities soon expanded to supply and marketing either by the transformation of existing credit societies into multipurpose societies or by the establishment of special societies for supply and marketing. Furthermore the processing of agricultural products has more and more been organised on a co-operative basis.

There are at present about 23,000 rural co-operative societies in Western Germany. 11,000 of them are credit societies, 2,400 societies for supply and marketing, 5,300 dairy societies for the processing of milk, 780 societies for the co-operative use of machinery (like threshing machines, tractors, etc.) and the rest belongs to a number of other types. The membership of rural societies is about 38 lakhs of persons mainly belonging to the group of middle and small farmers. Especially in processing and marketing of agricultural produce, co-operative societies are playing a very important role. Their share in processing and marketing is 80 per cent for milk, 42 per cent for grain, 30 per cent for potatoes, fruits and vegetables, but only 17 per cent for animals and meat. It is not the goal to obtain a monopoly in marketing for the co-operative societies. They are to

develop in free competition to the private tradesman. Usages of private business, however, are favourably influenced by the existence of co-operative societies.

There is no co-operative farming in the proper sense in Western Germany. 100 years of intensive co-operative activities have not resulted in the transition from individual to co-operative farming. Co-operation is understood as a measure to assist and foster member-farms so that the question did not arise to have the member-farms dissolved by their amalgamation.

On the other hand, there are some co-operative activities which have to do also with the processes of production. For instance, co-operative societies for the keeping of breeding male animals, promoting animal husbandry in peasant farms, are known since long time ago. The co-operative use of tractors applied in many multipurpose societies generally is confined to those working processes which are not strictly time-bound. But the tractor has made headway into the small farms not only through multipurpose co-operative societies or special societies for the maintenance of machinery but also through private persons, businessmen or farmers, who are hiring out a tractor to peasant farms. There are also legal forms of joint use of machinery other than co-operative, as for instance partnerships. In many cases there are only 2—5 farmers involved in the joint use of tractors so that for this purpose a co-operative society cannot be established since by German legislation this requires a minimum number of 7 members. Partnerships for the joint use of machinery are promoted by Government credits and other measures.

More recently some other common institutions, be it on a co-operative or on a communal basis have made headway in the German villages, viz., common laundries, bakeries, deep-freezers, etc. These institutions are based on the concept that it is not enough to relieve the farmer from physical work by mechanizing the farming processes. Modern agriculture requires the rationalization of home economy to facilitate the work of the female family-members as well.

There are also some examples in Western Germany for the systematic use of co-operative methods in farming operations but without turning to collective or joint use of land. It is rather a form of individual farming on co-operative lines. This new form of co-operative activities can be observed, for instance, in viticulture. In many cases in connection with land consolidation a large vineyard is established consisting of many small plots belonging to individual landowners but cultivated in a uniform way with the same varieties, the same cultivation methods, etc. Thus, the co-operative use of the mechanical plough, joint measures of plant protection, etc., are made possible regardless of the fact that every farmer is using his plot of land individually. The uniform way of cultivation furthermore has many advantages for the marketing of the produce which in these societies is also organized on a co-operative basis. Similar examples can be quoted for fruit-culture. In some rural communities specialized in tobacco-growing, the installation of a co-operative sprinkler-irrigation system has resulted in a common crop rotation and in co-operative co-ordination of farming operations carried out individually by the farmers on their plots of land.¹

1. Examples of this new form of co-operative activities developed in Western Germany have been described in detail by the author in the *Year Book of Agricultural Co-operation 1959*, Edited by the Horace Plunkett Foundation, Basil Blackwell, London, 1959, pp. 63-71.

Although until now examples of this kind are not yet numerous, they deserve to be mentioned because they are gradually spreading and may have a growing importance in future.

During the post-war period the productivity of agriculture in Western Germany rose remarkably. From 1935-38 to 1955-57 the yields per acre, for instance, on an average of several years have increased for winter wheat from 2,160 to 2,690 lbs., for potatoes from 16,500 to 20,000 lbs, for sugarbeet from 28,800 to 30,000 lbs, etc. During 1950 to 1957, the average yields of milk per cow have also increased, namely from 5,500 lbs. yearly to 6,700 lbs. This rise in productivity is connected with gradual progress in modernization and rationalization of agriculture. It cannot be said, however, that all farms in Western Germany including the small and middle-sized holdings or at least the majority of them are representing completely modernized enterprises. The number of backward small farms characterized by primitive tools, cow-driven carts and entirely outmoded farm buildings is still big enough.

In small units, especially in part-time farms, relatively high yields may be achieved even without modern equipment. But in the long-run this is not a satisfactory condition. The improvement of the agrarian structure and the modernization of the farms, therefore, now-a-days is the main object of agrarian policy in Western Germany. Some remarkable progress has already been achieved in this direction. The apprehension that in the age of modern techniques and beginning automatisations small and middle-sized farms will not be able to compete does not seem to be justified, if one observes how even in those farms modern techniques are making headway at a rapid pace. Furthermore, the view has gained ground that for the development of economy and especially of agriculture the requirements of techniques and rationalization are not the only determining factor but the needs of human nature are to be considered as well. This is also one of the reasons why in Western Germany it is the goal of agrarian policy to preserve the peasant economy in adequate sizes of holdings.