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Food Production and Population in the Arab World *

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ECONOMIC COMMISSION FOR WESTERN ASIA

THIRD REGIONAL POPULATION CONFERENCE

25-29 MARCH, 1984

AMMAN, JORDAN

FOOD PRODUCTION AND POPULATION IN THE ARAB WORLD

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Food Production and Population in the Arab World

I. Global

1. The precarious balance between population and resources is a major and basic concern of the Food and Agriculture Organization since the main purpose of FAO is to promote agricultural and rural development and to contribute to the improvement of the nutritional level of people in developing countries.

2. Many developing countries have however, in recent years, been unable to expand their food production fast enough to keep up with population growth. In still more of them the increase in production has fallen behind that in total demand, stemming from rising incomes as well as population. There is considerable concern at their diminishing self-sufficiency and food security, and the consequent increase in their import requirements.

3. High rates of population growth will continue to contribute to such difficulties for many years to come. By year 2000 a world population of more than 6 billion will require an agricultural output some 50 to 60 percent greater than in 1980. Demand for food and agricultural products in developing countries will, therefore, double.

4. The question of food supply is complicated by the impact of increasing numbers of people on the environment. For example, as more and more land is brought under cultivation, and demand for fuelwood and timber rises, essential tree cover is removed. The result is erosion, flooding and silting, which lead to deterioration of the soil and reduced agricultural productivity.

5. Imbalances between food and population growth imply continuing widespread malnourishment in developing countries. This in turn means high mortality and shortenend lifespans. The response, as all the evidence shows, is continued high birth rates. Any attempt to bring down birth rates will be defeated if poverty and malnourishment continue to exist on a large scale in developing countries.

6. New light has been thrown on the subject of the relationship between population and resources by two studies recently completed by FAO.

7. "Agriculture: Toward 2000" (AT 2000) analysed agricultural development trends against population projections up to the year 2000. AT 2000 found that substantially higher growth could be achieved with a large but realistic increase in resources to modernize agriculture. A doubling by the year 2000 of the US$ 7,500 million invested during 1980 could greatly reduce rural poverty and the number of undernourished people.

8. The study demonstrated that past trends in food and agriculture have led to a situation which, despite notable achievements, is fundamentally unsatisfactory. The great majority of developing countries with nutritional problems in the mid-1970's were in that situation precisely because past trends in per caput calorie supplies (whether domestically produced or imported) were unfavourable. This, in turn, increases the numbers of the undernourished, decreases overall self-sufficiency, greatly increases cereal import requirements and leads to a virtual disappearance of any agricultural trade surplus.

9. Demographic trends aggravate such food problems in the developing countries and reflect how agricultural production and food demand interlock. Population increases, therefore, remain the predominant influence on demand which cannot be adequately met. Many of the people in developing countries will suffer daily physical deprivation, damaged health and growth. The capacity of children to learn and adults to work will be markedly reduced.

10. The study, AT 2000, posed the question: Would a decline in population growth modify materially the predicted results? It was postulated that:

(i) lower population growth could ease considerably the population related problems of some low-income countries which were lacking in the infrastructures required for development. A smaller population could improve per caput productivity and pressures on balances of payment for food imports could be lessened.

(ii) Under medium and low variant population projections, the number of undernourished people would be lessened if national patterns of calorie consumption remained unchanged.

(iii) The broad magnitude and nature of the main problems of world food and agriculture - and the policies required to meet them - would still, however, remain essentially unchanged even with some deceleration of population growth.

11. The second study "Land Resources for Populations of the Future" determines the potential population supporting capacities of the lands in five regions of the developing world and involved 117 countries. These estimates are compared with data on present and projected populations to identify critical areas where land resources are insufficient to meet the food needs of existing and/or projected populations and where action is urgently required to rectify this situation.

12. Estimates of cultivable land and its capacity to support human populations have yielded greatly varying results. The definition of arable land depends upon the level of technology, the levels of input-use in agriculture and the specific output-mix. The carrying capacity of a land area, on the other hand, depends upon the nutritional intake of the human population, on the form in which food is consumed and on various other institutional and socio-economic factors. Moreover, the level of aggregation at which the carrying capacity is considered makes a vast difference in the result received.

13. Potential productivity was assessed at three different levels of technology and input-use:

- low level of inputs, assuming only hand labour, no fertilizer and pesticide applications, no soil conservation measures and hence with full productivity losses arising from land degradation, and cultivation of the presently grown mixture of crops on all potentially cultivable rainfed lands;

- intermediate level of inputs, assuming the use of improved hand tools and/or draught implements, some fertilizer and pesticide application, some simple soil conservation measures lessening productivity losses from land degradation, and cultivation of a combination of the presently grown mixture of crops and the most calorie (protein) productive crops, on all potentially cultivable rainfed lands;

- high level of inputs, assuming complete mechanization, full use of improved varieties, necessary farm chemicals and soil conservation measures, and cultivation of only the most calorie (protein) productive crops on all potentially cultivable rainfed lands.

14. The potential production of dietary energy and protein was then computed for each land unit at each input level. This was compared with minimum dietary energy requirements (expressed as national averages per caput), first for the actual population in 1975 and second for that projected for 2000 under the United Nations medium variant. On this basis "critical" areas and countries were identified that appear to have insufficient land to produce, at one or more of the different input levels, the minimum nutritional requirements of their inhabitants.

15. All three levels of input situations assume the cultivation of all potentially cultivable land. Labour requirements for this have not yet been taken into account in the study nor has it been possible to give consideration to socio-economic circumstances, including cash crop production and subsequent food purchase. Thus, it should be emphasized that the results represent only a first approximation of the general situation.

II. State of Agriculture in the Arab World

16. The rapid growth of population (2.9 percent per annum), urbanization and increased income in the Arab World has resulted in a burgeoning demand for food. While food demand has been growing rapidly, food production has not been keeping pace. Between 1961 and 1970 the food production level of 3.3 percent p.a. was slightly ahead of population growth. Since that time, however, the level has declined to 2.8 percent p.a. and continues to decrease. Short of massive food imports, the only way to meet the expanding food demand is an improvement in the performance of the agricultural sector and a deceleration of population growth to 2.5 percent p.a. by the year 2000.

17. The factors limiting a faster increase in production are fundamental and deep-seated. They cannot easily be overcome while the cultivated area constitutes only 9.1 percent of the total land area. Much of the region, however, is arid or semi-arid and the productivity of agriculture in such land is low. Substantive increases in food production can only be achieved by introducing well-planned and efficiently utilized irrigation schemes. Thus, the achievement of the production goals calls for considerable effort and investment.

18. Only 35 percent of the harvested area was irrigated in 1975. There has been a severe constraint in the adoption of modern technology, particularly seed-fertiliser technology. Livestock, raised for the most part under nomadic system, has led to overgrazing and, thus, decreased productivity of pasture land. Expansion of cereal cultivation has depleted pasture land even further and accelerated desertification. Limits to raising production further, in some countries, account for the deterioration in self-sufficiency in cereal and livestock products.

19. The Arab World is the most critical region from the standpoint of potential population supporting capacity of the land. Statistical information on this aspect is available for 20 of the countries in the region.

20. Should low levels of inputs prevail, 17 out of 20 countries will be unable to meet their food needs from national land resources for either their present or year 2000 projected populations. Use of intermediate levels of input would imply that the 11 countries who cannot feed their present populations will be increased to 15 by the year 2000. Even with high levels of inputs, the 8 countries unable to feed their present populations will increase to 10 by the year 2000. When the resource situation is as precarious as the one described, the supply of the food requirements of the population in excess of the carrying capacities becomes critical. The real reserve potential lies not so much in idle land as in improved technology, increased irrigation and land reclamation with a view to enhance the land resource base.

21. The demand for cereals, which constitute the bulk of the diet of the region's population, and the major item of expenditure on food, increased by 58 percent between 1961-65 and 1974-76. The region does not have the land resources to meet this increased demand for cereals, nor for other food crops and non-food crops. Nor can yields be substantially raised due to the predominance of rainfed agriculture. Natural land resource endowment of the region is complicated by the large dependency on rainfall. 65 percent of the total agricultural land of the region is rainfed and the rains are frequently erratic in both distribution and timing, leading to instability of production. Thus, traditional cultivation practices must be improved and soil conservation methods introduced to prevent erosion, maintain moisture and make the most efficient use of appropriate inputs.

22. The region, because of the magnitude of its import dependence on external sources of supply, is vulnerable to the availability of supplies. Thus, an improvement in food security is of paramount importance. The impact of fluctuations in domestic production could be reduced by collective self-reliance. A food security reserve scheme for wheat in the region, as a whole, could meet most shortfalls in production; storage programmes would however need to be undertaken at sub-regional level.

23. The achievement of the production goals would call for selective policy interventions. The diffusion of modern technology among the farmers would require a stronger system of incentives. The gap between domestic producer prices and international prices would have to be reduced. There is much to be said for a policy of input subsidization in the region as it avoids raising food prices for the consumer which is a matter of serious concern to the governments of many countries in the region. If a cheap meat policy is to be pursued, it would be necessary to influence producer prices through official buying or providing price support as a development measure.

24. While increase in cropping intensity would increase the rate of labour absorption in agriculture, the region may then be faced with a shortage of agricultural labour due to rural-urban migration as well as migration to oil exporting countries for employment. The wide disparity between agricultural incomes and non-agricultural incomes would reinforce this tendency. This would lead to a substitution of machinery for labour at a faster rate. If agriculture is to retain the necessary labour, employment opportunities in the rural areas would have to be increased by investment in infrastructure and in processing of agricultural raw materials. More broadly based agricultural growth could alleviate rural poverty. Also the provision of public services such as housing, health and education would have to be more widely diffused. In short, rural welfare would have to be enhanced in a substantial measure.

25. Above all, major improvements are needed in rural infrastructure, institutions and services if input use is to be increased sufficiently. These are not confined to input delivery systems, but also involve such things as extension, credit, marketing, and access to land. If these are not modified to meet the needs of small farmers on the lines agreed by the World Conference on Agrarian Reform and Rural Development (WCARRD), not only will production potentials not be fully realized, but poverty will not be sufficiently alleviated for all people to be able to afford diets that meet even their minimum nutritional requirements.

26. There are significant areas where cooperation between the sub-regions would be most beneficial. Although intra-regional trade at present is generally small, the flow of such trade could be increased if there is greater specialization among the sub-regions. This would involve changes in the structure of production in respect of major crops, involving radical changes in the production pattern of the farmers. It should, however, be feasible in newly reclaimed areas in countries where there is scope for land expansion. The rapid increase in oil revenues from 1973 has opened up immense possibilities for cooperation in investment and financing of agricultural development.

27. The low income countries, in general, have greater agricultural resources but they lack the capital for their development. The channelling of funds to low income countries with agricultural potential could enhance regional complementarities and advance regional cooperation. There could also be greater cooperation between the sub-regions in the production of agricultural inputs, particularly fertilizers and pesticides, as the region is richly endowed with the raw material for their production. In view of the acute deficiency of trained manpower in the region, especially for identification, preparation and appraisal of projects, regional and subregional cooperation in the training of personnel in project analysis, management and related research is an urgent need. This is crucial for absorbing the flow of investment funds. Intra-regional cooperation in the fields mentioned above can make a significant contribution to economic growth in the region.

28. While, on the one hand, agriculture in the oil exporting countries has benefittedfrom higher investment, subsidies and price support, the demand for labour in the urban centres has led to out-migration from the farming sector and attracted migrants from other countries. Since it is the young and the educated who migrate, agriculture tends to suffer from a lack of skilled and efficient labour.

29. A major factor contributing to inadequate production in the Arab World has been the low priority given to agricultural development in many countries. When one considers the strategic role of agriculture in the economy of the region and the demand for funds for water development, management and mechanization, the allocation to the agricultural sector in national development plans has been insufficient. Little attention has been given to increasing the productivity of land already under cultivation. The ever-increasing cost of food imports has, however, created a greater awareness of the importance of development of the agricultural sector.

30. For those areas that already carry more people than the land resources can support with high levels of inputs, solutions involving population planning and distribution; major land improvements including irrigation; and food importation (especially from adjacent countries with surplus production potentials) have to be considered. Without such remedies, continuation of the present situation in critical areas, not importing food, can only lead to deteriorating conditions due to land degradation, declining productivity and increased malnutrition.

31. Development action within this context is, however, the result of social, economic and institutional policies in the context of all human, national and material resources. With regard to population growth, the increased income in the oil exporting Arab countries has not been accompanied by comparable improvements in educational levels and general social conditions. There have been, however, improvements in health conditions which have resulted in a significant increase in the already high demand for children. These same improvements have resulted in a higher level of life expectancy and a larger number of young people in the total population.

32. The unusual gap between social and economic aspects of development has had important demographic consequences affecting the supply and distribution of the population and labour force in the region. Development therefore will necessitate a whole set of integrated policies applied to all resources of the region.

Concluding Remarks

33. Food production in the Arab World has not kept pace with fast growing demand and increasing population growth. The rate of food production was 2.8 percent per annum in the 1970's but has declined to 2 percent per annum in the early 80's. As a result the region remains a net importer of food, notably cereals, at a rapidly increasing rate. This leads to a severe strain on the balance of payments in many countries. Under these circumstances, there is an urgent need to expand, where possible, the areas under cultivation; intensify agricultural production; improve the provision of agricultural services and inputs, including fertilizers and seeds; and optimize the use of limited soil and water resources. In addition, the necessity to strengthen national research, training and extension services continues to be of paramount importance.

34. Improved irrigation and drainage practices are needed in order to alleviate water-logging and salinity and to check the loss of scarce productive land. The control of over-grazing and expansion of rainfed cultivation in marginal areas are among the factors required to prevent soil degradation. Emphasis, therefore, should be placed on improved management of soil and water resources at farm level.

35. In crop production, the intensification and diversification of production of basic food crops and horticultural crops must be actively sought. New technologies must be adopted to improve post-harvest storage, processing and conservation of both food and non-food products thus providing an incentive to increase production.

36. The demand for livestock products in the region is expected to grow at a rate of about 4.5 percent per annum during the 1980's, since the consumption of food of animal origin is increasing rapidly due to increased incomes and increased population growth. Cooperative efforts within the region are essential to control animal diseases and to encourage more efficient animal production systems.

37. Research centres in the Arab World still lack the desired level of competence; research management and planning is generally weak; and the availability of trained manpower for research is still inadequate. Furthermore, information on ongoing research, existing research capabilities and areas of possible inter-country cooperation in research is also limited.

38. Despite legislation designed to reduce inequalities in land distribution in many countries, the well-being of the ever-increasing population of the rural areas is still adversely affected by excessive fragmentation of small-holdings.

Better organization and management of land settlement schemes in newly irrigated areas, more efficient organization of beneficiaries and better economic and social services are of vital importance in the development of the rural areas.

Agricultural extension services need to be further improved and their capacity to reach small farmers must be expanded. One of the main constraints in this area is an acute shortage of well-trained personnel. Moreover, the important role of women in agricultural production is not yet generally recognized by existing agricultural development programmes, although their contribution is of the utmost importance, particularly in rural areas where there has been an out-migration of young males to urban centres.

39. Massive food imports and rapid changes in life style and food habits in many countries of the region have added to the prevailing food and nutrition problems. Appropriate measures are, therefore, required at national and regional levels to improve the nutritional status of many segments of the population. Emphasis must be given to strengthening the capabilities of national institutions which deal with food and nutrition issues. In those countries where the rural population is still predominant, consideration must be given to the introduction of nutrition components which include family life education in agricultural and rural development projects.

40. The preparation of timely and effective agricultural and rural development plans which include population-related data is still hampered by the insufficient statistical coverage of the agricultural sector in many countries of the region. Thus, training of national personnel to carry out comprehensive statistical programmes remains essential. Furthermore, many countries still lack an adequate capacity to formulate, execute and monitor their agricultural development plans, policies, programmes and projects. Consequently, progress towards regional integration, which would have benefitted the rural people in these countries, has been retarded.

41. In the "State of Food and Agriculture", 1982, the Director-General of FAO stated that he felt it was important for people who are concerned about world food and agriculture to view the immediate situation in the longer-run, with a forward-looking perspective. Rapid population changes and urbanization trends in many countries were generating new challenges related to food systems; human services; land, water and forest use; and political balance.

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