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THE SOCIAL ASPECTS OF INDUSTRIAL DEVELOPMENT

Presented by

The United Nations Educational, Scientific and Cultural Organisation

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

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Introduction

1. The concept "social aspects of industrial development" refers to two sets of facts, one set relating to the advance of a given society towards the industrialization of its economy, in which case we speak of the social factors of industrialization regarded as an evolutionary process. The other set deals with the type of society established after industrialization has been attained. In this second case, a discussion of the social aspects of industrialization leads to an examination of the characteristics of the industrial society itself.

2. We shall here assume exclusively the first of these two points of view, to call attention to certain social factors of evolution towards the industrial society.

The population problem

3. Population pressure often makes the industrialization effort more difficult. A simple economic calculation shows that for a 1 per cent annual rate of population growth the investment necessary to prevent a decline in the level of living amounts to 2 or 3 per cent of the national income.

4. Now some countries have a very high rate of population growth. This is the case, for instance, with Libya (3.7 per cent), Madagascar (3.1 per cent), Ivory Coast (3.3 per cent), and Somalia (3.5 per cent) in Africa; with Jordan (3.1 per cent), Syria (3.2 per cent), Malaysia (3.1 per cent), Philippines (3.3 per cent) and Thailand (3 per cent) in Asia; with Costa Rica (4.3 per cent), El Salvador (3.5 per cent), Honduras (3.3 per cent), Mexico (3.2 per cent), Colombia (3.2 per cent), Ecuador (3.1 per cent), Peru (3 per cent) and Venezuela (3.4 per cent) in Latin America.

5. These countries are, of course, extreme cases. Yet there are 42 other countries with annual population growth rates between 2 and 3 per cent.

6. These figures are alarming; they show that in an immense part of the world - the very poorest part - population pressure raises the problem of subsistence itself. It is singularly difficult, under these conditions, to devote an adequate

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portion of the national income to the productive investments called for by industrialization.

7. The problem of a "population policy" is thus raised for many countries. It must, however, be added that the methods proposed for its solution are violently controversial.

8. The effect of the age structure of the population on industrialization has often been emphasised. If the age pyramid is narrowed at the base, the aging of the population will soon deprive the economy of the dynamic elements and labour potential that are indispensable for industrialization. If, on the other hand, the base of the pyramid is very broad - as is the case, for instance, in Africa or Latin America, where the population comprises 42 or 43 per cent of children under 15 years of age, and 54 or 59 per cent of adult workers between 15 and 65 years of age - the large number of inactive persons is a very heavy burden on the economy, for a great share of the national income must be used to meet their needs, and thus for consumption, decreasing the amount available for productive investment.

9. It may happen that certain age classes are relatively small, for causes that may be either temporary (demographic situation after a war, for instance) or permanent (large scale and continuous emigration of active elements, as in some Mediterranean countries). The existence of these small age-classes gives rise to lasting difficulties: amputation of the active population, while the rate of growth is particularly sensitive to the quantity of labour available to the economy; repercussions on the following generation, and hence a similar amputation, unless the natural movement of the population, assisted by measures to encourage births, restores equilibrium. The prohibition of emigration rarely yields a genuine solution. If some persons emigrate, it is because there are no local openings. To keep them in their home country, it would be necessary to alleviate unemployment and under-employment. Forbidding departures sometimes involves the risk of making efforts for industrialization and development even more difficult.

10. A specific form of emigration, which because of its nature is receiving particular attention, is the "exodus of the skilled" ("brain drain"). Many countries

and international organizations, UNESCO in particular, are emphasizing the risk connected with the expatriation of scientific and technical personnel, or, more generally, persons who are specialized and highly qualified, who emigrate to more advanced countries.

11. The causes of this phenomenon are multiple: unemployment or under-employment, intellectual aspirations, or simply the desire to find a career appropriate to the emigrant's preparation, hope of higher remuneration or a more comfortable life, political reasons - motivations relating to the social-economic and cultural background, or, on the other hand, to individual reactions.

12. The percentage of specialized workers lost in this way to their country of origin is sometimes high. In this case the process of industrialization of such countries is seriously compromised for lack of the cadres that are carriers of progress.

13. Emigration largely masculine may likewise cause an imbalance on the side of the feminine population, often composed of "inactive persons", and thus render the investment effort more troublesome.

14. The ecological scene is closely connected with industrialization. The urban environment is one of the conditions of industrialization, and industrialization accelerates urbanization. Although these relations are as yet insufficiently elucidated on the scientific plane, there can be no doubt of their actual existence.

15. More and more it is being emphasized not only that industrialization demands the large population centre, which provides the labour and the jobs as well as the density of services that make it possible for centres of economic decision to arise, but also that the urban way of life, the social relations, the models, the attitudes and the values that dominate the urban environment create a set of factors favouring the birth of industries. The proof is that the rural scene itself, in the wake of agricultural modernization, is in a way becoming urbanized and is acquiring certain social and cultural features of city life.

16. The planner is giving more and more attention to these ecological aspects. He no longer confines himself to noting that the rural exodus leads urbanization extensively to anticipate industrial development. Now he adopts an attitude of resolute activity, and knowing that urbanization is an irreversible and irresistible tendency, he seeks to place it at the service of industrial development by area improvement and rearrangement. The voluntary remodeling of the urban system of a country then becomes the task of interdisciplinary teams including not only economists and engineers, but also sociologists, psychologists and a number of specialists in the sciences of Man.

17. The breadth of the programmes implemented and the problems to which they give rise often involves a secondary development of the applied social sciences, which is reflected in the current trends of research in the sciences of Man. UNESCO is giving particular attention to this development, for it sees in it one of the conditions for a suitable introduction of the industrial phenomenon into the future of the societies.

Factors at the level of labour

18. Industrialization requires great social mobility, both horizontal (change of residence) and vertical (change of occupation). This mobility is due to the demand of industrial work for labour and services - a demand that is expanded by the creation of new jobs and the marked division of labour imposed by industry. Thus it is clear that industrialization cannot be realized without sufficient social mobility.

19. Numerous sociological problems arise in connection with these phenomena.

20. Recruitment for industry and the auxiliary services being primarily from the rural population, the structure of that population must be capable of providing the personnel required without becoming unbalanced. Many countries import the labour indispensable to their industrialization by means of immigration. In the past, this was the case for the United States and Australia; today Italy and Greece, long exporters of labour, are making every effort to repatriate their emigrants, and are even thinking of a policy of selective importation of specialized labour. While the rural exodus is a phenomenon of great scope in most developing countries, it is

emphasised that in some African countries, for instance, industry exerts so great an attraction on the rural population that the farms are deprived of the labour needed in the primary sector, and their production is endangered. This in no way excludes the presence of excess labour in urban zones, where the number of employed increases at the same time the active workers are unemployed in parasitic occupations

21. It should here be emphasised that the workers' lack of specialized training may act as a major brake on any rise in the level of industrial employment. The methods to be followed to solve these training problems will be indicated below.

22. Let us, in any case, recall at this stage that industrialization implies the broadening and enrichment of the occupational structure by the creation of new occupations. The statistics of the advanced countries are most eloquent on this point. To mention only a single example, that of France, its code of occupational categories comprises 31 categories of higher administrative cadres, 38 of intermediate cadres, 69 of office workers, 26 of engineers, 32 of specialized workmen, and 33 of skilled workmen. We are very far from the traditional division of labour based on a "multi-functionalism" of each of the agents of economic life, group or individual.

23. The developing countries have become clearly aware, especially during the last decade or so, of the importance of training and education as factors of industrial development, and of course there is every reason to think that UNESCO has contributed to this realisation. The conferences of Karachi (1960), Tokyo (1962), Bangkok (1965), Santiago (1962), Buenos Aires (1966), Addis Ababa (1961) and Abidjan (1964), and that of Tripoli (1966), mark the historic landmarks.

24. At the same time, the example of the industrialized countries convinced the developing countries that the expansion of the educational services should go hand in hand with the development of the social services, such as labour protection, social security, family allowances, etc.; and it is true that industrial development calls for the physiological and psychological adaptation of the worker (ergonomy), the improvement of housing conditions, access to cultural activities, etc. It is hardly

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necessary to recall the definition of development given by the Secretary General of the United Nations: economic growth plus social change.

25. More and more attention, however, is being attracted by the problems inevitably raised by this expansion of what are called "the social services", for simplicity. It is clear at the very outset that the increase in consumption costs may operate to check productive investment. But, beyond economic accounting, it has been recognized that the "dualism" often characterising the economy of developing countries, with their juxtaposition of a modern sector and a traditional sector, tends in this way to expand into the dimensions of a social dualism, and that the tensions resulting from the juxtaposition of two societies, two worlds, gives rise to distortions whose cumulative character must be stressed. This dualism, for instance, is encountered in the wage structure, and soon engenders an irresistible dynamism, dragging the total wage income into an inflationary spiral. Thus, in the developing countries, major unemployment is seen to co-exist with a wage inflation stemming from "the revolution of aspirations", in the irresistible attraction constantly exerted by the way of life, the structures of consumption and the whole system of advantages that are felt to be the symbols of accession to a new social status.

26. There can be NO doubt that decolonialization has considerably accelerated this cumulative process by offering the hope of speedy and generalized access to the social status heretofore reserved to the colonizers. Nor can there be any doubt that, for instance, the Africanization of the key personnel, indisputably necessary though it be, has strongly contributed to the reinforcement of the dynamism of the "demonstration effect" which has impelled the African elite, followed by the officials, the labour unions, the various categories of wage-earners, and, more generally, all those aspiring to find employment outside of the traditional sector, to desire to accede to the patterns of life exemplified by the industrialized countries.

27. Further than that, outside the realm of decolonialization and Africanization, the case of the Latin American countries indicates that industrial development gives rise to similar tensions. The eruption of the industrial phenomenon into the traditional social structures creates both the set of distortions already mentioned and social tensions, which easily reach a critical level.

28. These are tremendous problems, whose elucidation is merely beginning. They call for a substantial research effort in the field of the social sciences, resolutely applied to industrial development.

Organization

29. Among the problems which must in future be objects of this research, we may mention in particular those directly related to the organization of industrial work.

30. The models of organization, each day made more complex by scientific and technological development, bear the profound imprint of the imported character of the technologies put into operation. Much could be said about the adaptation of technology to the peculiar conditions of each developing country, but here is not the place to say it. On the other hand, what does have to be stressed here is that the developing countries have imported, together with the technology, organisational models, a job structure, an assignment of functions and a distribution of qualifications which, begin poorly responsive to their own social conditions, often create additional, and, it may perhaps be said, artificial problems for them.

31. We have no desire to minimize the importance of the transfer of the knowledge and techniques called for by the industrialization of these countries. But neither should we underestimate the scope of the research demanded by the need for adapting, to the individual peculiarities of specific societies, the organizational models, the occupational profiles, the hierarchy of job positions, the structure of the enterprises, the behaviour of the managements, and the interrelationships of functions, duties and initiatives between the various public and private organizations.

Professional and social structure

32. Another problem which will not fail to attract attention is the increasingly important role played by certain categories in industrial development. We refer to the administrators and organizers of enterprises, on the one hand, and to the technologists and scientists, on the other.

33. As industrialization advances, the administrators and organizers, together with the personnel that manage the enterprises, find their part in the decision-making process increased at the expense of the part played by the owners and shareholders. This is the inevitable result of the increasing complexity of the technologies put into operation.

34. The same is true of the scholars, the research workers and the industrial engineers, owing to the constant and increasing recourse of industrial work to the applications and scientific and technological discoveries that can enhance productivity and at the same time diminish production costs.

35. Conflicts are often noted between these professional categories and the traditional holders of the decision-making power, who tend to limit the role played by the professional group and thus retard the process of rationalization linked to industrial development.

36. In the societies of traditional character the primacy does in fact belong to those groups endowed with the prestige of riches, of origin, or of political influence. When these societies become industrialized, such groups feel that the increasing influence of the above groups of specialists is a threat to their position at the top of the social ladder and to the privileges appurtenant to their status. Resistance to change then becomes inevitable. It would be important to study the conditions under which these conflicts might be resolved in a sense favourable to industrial development.

37. The complexity of these phenomena should not be underestimated. Resistance is not always evident or conscious. Conscious, open resistance is readily embodied in the form of distrust of the efficacy of scientific and technological applications, or of economic calculation and planning, to which they oppose the efficacy of long experience and of common sense. In other cases, the scientific and technological professions are considered socially inferior. In still other cases, the spectre of a destructive technocracy, menacing the humanist civilisation, is raised.

The part played by education and scientific policy

38. Industrialization should be firmly supported by an adequate educational system. So it is that UNESCO recommends the integration of educational planning into the general planning of development.
39. The term "educational system" comprises not only school, university and technical education, but also the suppression of illiteracy and adult education.
40. The conferences of education ministers called periodically by UNESCO since the beginning of this decade in the various regions of the world, compare experience, study strategies and define the objectives of the educational policies in the several developing countries, with clear recognition of the financial difficulties and emphasis on the shortage of teaching personnel that must be overcome.
41. These difficulties are complicated by others, of a social nature.
42. First of all there is population growth. There is a great gap between the rate of growth of the number of pupils enrolled and the rate of growth of the general population. In spite of the progress in school enrolment and the campaign against illiteracy, the absolute number of illiterates in the world continues, in fact, to increase.
43. Secondly, school enrolment, above all at the secondary and higher levels, is still very largely reserved to certain social strata, to the middle and upper classes rather than to the worker and peasant masses, to the city dwellers rather than to the rural population, and to the boys rather than the girls.
44. This distribution is due not only to the differences in income level, but also by the attitudes of these circles towards the educational and occupational orientation of the young. These attitudes are themselves inspired by the values current in each such groups, and by the social and professional structure and hierarchic system.

45. In particular, while women in all countries constitute more than half of the population, there are only four countries - Costa Rica, Finland, Laos and Philippines - where the number of women enrolled in higher education is more than 45 per cent of the total number of students. In all the other states members of UNESCO, the proportion of women enrolled in higher education ranges from 5 to 40 per cent, and it is less than 20 per cent in most of these cases. This is a very serious economic and social waste, which our world, engaged in a struggle with poverty, can little afford. It is obvious that, as far as the education of women, in and out of school, is concerned, these disparities reflect attitudes inspired by the status of women in each of these societies, and in particular by their place in the structure of the family and the kinship group.

46. Very often, and in spite of appearances, and indeed of the infatuation with progress, the culture and social structure of the developing countries oppose the formulation of programmes consonant with the demands of modernisation and industrialization; the culture, by reason of its traditional nature, being incompatible with modern ideas, and the social structure, if these ideas are adopted, risking overthrow and replacement by a different one.

47. Yet this opposition is neither absolute nor prohibitive. It leads in fact to compromises and arrangements between existing socio-cultural elements and modern ideas, with repercussions on the content of educational programmes, and an effectiveness which, however, may be merely relative.

48. The struggle against illiteracy, in the functional conception recommended by UNESCO and adopted by its states-members at the Conference of Teheran, bears the imprint of the effort to overcome these sociological difficulties.

49. This is manifested, first of all, in the very perception of the phenomenon and in the definition of functional illiteracy as the inability of a citizen to play his part in a modern society, to do his job well, and well to discharge his civic duties, with all the responsibilities that result from them.

50. It is manifested, secondly, in the strategy adopted against functional illiteracy, a selective strategy attentive primarily to the level of motivation of illiterate workers and to the support that the campaign against illiteracy might arouse by the reaction of the environment into which it is introduced.

51. Thus its efforts are concentrated primarily on occupational on-the-job training of the illiterate workers employed in the sectors of priority activity.

52. Speaking generally and in summary fashion, for an educational system to become a powerful force for industrial development, it must be able to satisfy two major imperatives: to prepare men and women for employment in one of the branches of activity demanded by industrialization; and likewise to prepare the minds to accept modernity, which is the supreme condition for development and economic growth.

53. The part to be played by scientific policy in industrial development is as great as that of education in general. For it is by starting with scientific policy that the countries involved will have at their disposal an intellectual and professional potential, specialized in science and technology, for the service of industry.

54. To attain this goal the scientific policy should be able to assure, in close collaboration with the development plan, the education and training of scientific and technological personnel of higher and intermediate levels; the general enhancement of technology owing to research and the application of the knowledge acquired, and to the technical solutions found, permitting an increase in the number of job openings; the establishment of the infrastructure necessary for the development of research and technology, etc.

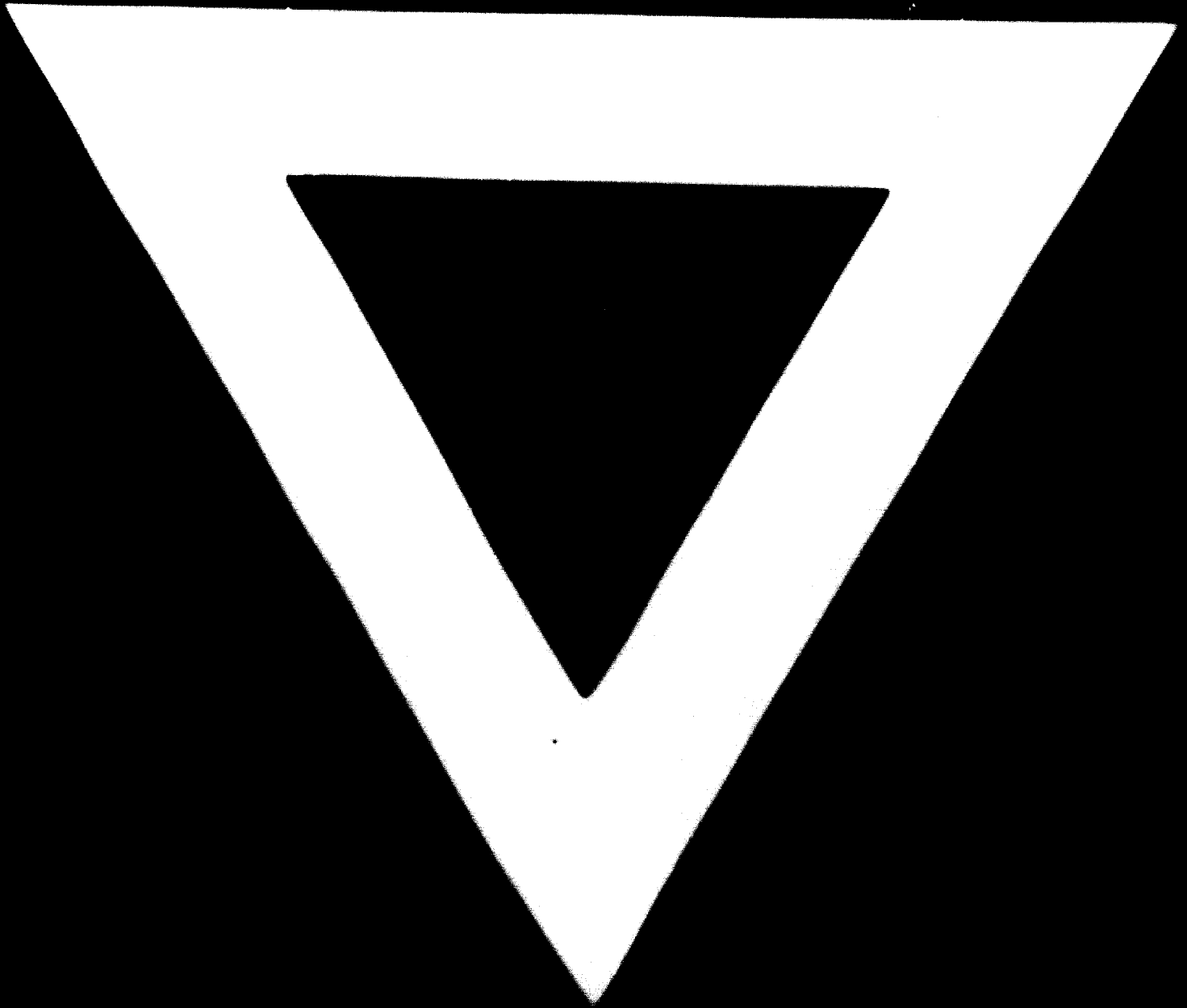
55. It must here be emphasized, however, that scientific policy can be operative only under favourable socio-psychological conditions.

Information services

56. Every strategy for development finds valuable assistance in the information services, supported as it is today by the media of "mass communication".
57. Their influence on industrialization is exerted in a number of different ways.
58. The information services are first of all a transmission channel for the propagation of new knowledge on a very large scale. Thus they become an agent of popularisation, a carrier of "continuous and parallel education".
59. Secondly, information services can keep public opinion up to date on the problems of development in general, their character and their possible solutions, thus tending to modify the collective attitudes towards industrialization and its problems.
60. Owing to this fact, they can contribute to the establishment of a social and psychological climate favourable to progress, and to promoting public participation in the effort for industrial development.

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