UNIVERSITY OF EDUCATIONAL
SCIENTIFIC AND CULTURAL ORGANIZATION

MEETING OF EXPERTS ON
CONTRIBUTION OF SOCIAL SCIENCES TO DEVELOPMENT PLANNING
(Bangkok, 8-13 May 1972)

DRAFT FINAL REPORT
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The Unesco General Conference at its 15th Session authorized the Director General to call a meeting on the "Contribution of social sciences to development planning". Recommendations were formulated in the final report of the first meeting held on this theme in Paris (1970).

This report (document SHC/CONF. 15/12 - 1970) underlines the importance of social science methods in the field of planning, and in particular, for system analysis, simulation models and evaluation techniques.

1. Organization of the symposium

The symposium was held in Bangkok, from 8 to 13 May 1972. It brought together seventeen experts, representing various disciplines in the field of social sciences and coming from 13 countries of which nine were Asian (a list of participants is attached in an annex). Also, observers represented the international organizations concerned (UNDP, FAO, UNICEF, ECAFE, IBRD, OECD, Asian Institute for Economic Development and Planning).

2. Objectives of the symposium

The overall objectives of the symposium were the following:

1. The need is constantly becoming more urgent to offer the development planner accurate and effective methods and techniques, to enable him to fulfill his task more satisfactorily, especially in the field of social planning. Though for economic planning, concepts, methods and measuring tools are already quite sophisticated, this does not hold true for social planning, especially when it involves integrating sectoral activities (including economic activities) into the global development process. At this level, knowledge remains scanty. Approaches are in this field most often based on common sense, intuition, and, in general, approximation. Therefore, the social sciences are constantly being solicited to help correct these weaknesses.

As a basis for discussion, the Secretariat distributed three working documents to the participants:

- Systems analysis and development planning (Mr. S. Thébaud)
- Simulation of social development (Mr. J. Skolka)
- Project evaluation techniques, with special reference to educational projects (Mr. S. N. Mishra).
Experts were to discuss these papers:

a) from the viewpoint of the social science programme, that is to say promoting research in areas relevant to the needs of development planners

b) bearing in mind either the strengthening of university programmes for training specialists able to work in planning departments - or the creation of agencies adapted to this purpose

c) taking into account regional problems and special characteristics of each country

d) with the object of establishing international contacts between researchers and of improving methodology and making it operational within broader fields.

3. Opening of the session

After addresses by Mr. K. Nhouyvanisvong, representing the Director of the Unesco Regional Office for Education in Asia and by Mr. G. Kavadias, Representing the Director General of Unesco, the Conference selected a Chairman, Pr. P. Chomchai (Thailand) and two Vice-Chairmen, Pr. A. Angelopoulos (Greece) and Pr. R. Pieris (Ceylon) ; Pr. A. Piatier (France) was elected Rapporteur.

I - PRESENTING AND DISCUSSING THE REPORTS

1.1 Overall trends

From the onset, it was apparent that the experts wished to consider the theme of development planning under as wide an angle as possible. Some communication difficulties appeared, not on grounds of doctrine or of geographical differences, but mostly because the different disciplines which are part of the social sciences, basically do not have either the same concerns, or the same methods for analysis, nor do they use the same terminology. Thus, it became evident, that among the most important tasks faced by the representatives of the social sciences, bridging of language differences, standardization of approaches and broadening the conceptual and methodological spectrum, were priorities.

The three approaches as presented by their proponents (Mr. S. Thébaud) for system analysis, Mr. J. Skolka for simulation and Mr. S. N. Mishra for evaluation techniques) were during the discussion which followed, replaced in the wide range of techniques actually available, or which will shortly be derived from the application of mathematical techniques to new fields in the social sciences. For each one of these approaches, the experts discussed their application to different aspects of social systems, how these techniques could be transferred from developed countries, where they are currently used, to developing countries where the problems are different and where statistical data is less abundant.
The symposium also discussed the interrelations between sub-systems in a given society, between the system as defined for each approach and its environment. It appeared that the three techniques considered above were more readily applicable to analysis of more limited scope, sectoral for example, belonging in the sphere of economics. The difficulties in applying these techniques increase when the system under study is broadened and when it spreads from the field of economics strictly speaking to the social structure (education, health, welfare, environment, political system, quality of life, etc ...). A rather animated discussion took place, to determine if there was any prospect of the social sciences integrating into a global model the many criteria, which are significant indicators of society as a whole.

On the subject of the different techniques applied at different levels of analysis, the experts specified what the planner's action should be, what skills he should acquire through a training well adapted to his needs, and what means he should have at his disposal, especially in the way of data. On this last point, an enriching discussion took place on the limits to quantification in these spheres and the aspects removed from the classical field of economic analysis, and therefore, on the possibilities of using, in models, qualitative variables.

This aspect of the debate can be summed up in stating that the very sophisticated methods, currently utilized by economists, such as, for example, cost-benefit analysis, cannot be transposed, without considerable modifications, to the social sphere.

Different ways of facilitating the extension of scientific methods to the whole of the social field were suggested: these are presented in detail, in the second part of this report, with the recommendations.

1.1.2 Specific methods for social planning

During the first technical discussion, it was observed that the eventual use of the methods worked out above depended upon the level of political education prevalent in the countries in question. Whereas it would be necessary to consider a few dozen variables for macro-planning, in the present case only a few of the more "manageable" variables are retained and the other discarded. The way the problem was outlined by the Unesco Secretariat met the approval of several experts who found it attractive and not too formal. Some felt distrustful towards what they call "colonialistic" variables.

At the methodological level, the discussion concerned the applicability of mathematical models. Formulating models is not an end in itself and it is at least as important to determine the objectives of social development. It appears that the papers presented are limited to fairly restricted subjects. Several experts insisted on the
fact that specific or sectoral activities have no meaning if they are not placed within the general context of development. In planning, the effect of the time factor should also be taken into account, for example, in contrast to its short term effects, education is only fully effective after a period of twenty years or so.

I. 2. Applicability of analysis to development planning

The main points discussed by S. Thébaud were the following:

I. 2.1 Exposé by the rapporteur

There are two system approaches: 1. general systems theory 2. systems analysis

The aim of the general systems theory is to discover the basic mechanics of how actual systems behave.

Systems analysis is a method for preparing decisions where the following steps are observed: i) defining objectives ii) determining the means to achieve these objectives iii) evaluating the different means judged necessary to attain the desired objectives.

These two approaches complement each other and can be applied to development planning. Five different stages are identified during the planning process. First phase: an abstract system is applied to the social structure being studied. The concepts of the general systems theory can be very useful in dividing the social structure into sub-systems and for studying the relationship between the latter.

Second phase: working out a development strategy. In this phase a social project is worked out, as well as objectives, rules for sharing economic surplus, criteria for technical decisions, etc...

Third phase: programming

Programming consists in working out projects and programmes at the level of each sub-system and to make sure the results obtained at this stage all concur.

Fourth phase: organisational reforms. This is the institutional phase of planning.

Fifth phase: execution and control of the plan

It should be noted that the whole of the planning process presents a repetitive pattern and that these different phases repeat themselves, at different levels of the social structure.

1.2.2 Discussion of Mr. Thébaud’s paper: the observers viewpoint

The experiences implemented by ECAFE are criticized: they use no valid global social indicator (such as life-expectancy, for example), but only sectoral indicators instead. GNP is insufficient as an indicator and when we are faced with several indicators, we are not able to weigh or combine them. It appears, though, that the graph theory or multi-criteria analysis are more satisfactory for formulating synthetic judgments and rational decisions (a paper on this type of analysis,
such as it is being applied by a team of researchers in Paris is distributed by one of the experts). It was also pointed out that variables are different at different stages of development. The error made in the first development decade must not be repeated: in this case one was only aiming for a high global rate of increase which should have solved all development problems. At the beginning of the second decade it was remarked that even with rates of 5 to 6%, never so many social tensions and disappointments had been observed. Using the plans worked out in Western countries for application in the developing countries had a successful impact upon 5 to 20% of the population whereas the rest was plunged into poverty. Practically everywhere revenue sharing policies have remained outside the scope of the plan. Too often one has overly concentrated on the new institutions, created to achieve development, and when these start to function nothing more is done. Attempts are being made to adapt methodology to Asian conditions and to link planning to different social criteria (maximum well-being and income-sharing for example). Another sphere for development the Plan must take into account is the rural world: frequently overpopulated, offering low incomes to its inhabitants it is subject to an important exodus towards the cities, where the number of rural unemployed grows. Job opportunities must be created in the rural zones and in towns of average size. At the present time the World Bank devotes 5% of its loans to social development projects (such as health, education, family planning, rural development) and this percentage will continue to increase. Therefore, this is why all the observers showed interest in the symposium and in developing techniques favouring the extension of planning in the field of social development.

I.2.3 Problems raised by the experts

Mr. Thébaut answered questions on the following queries:

a) Weaknesses of the planning process

Weaknesses in the field of planning stem from a lack of understanding of the mechanisms of social change. Therefore it is necessary to extend the field of economic planning to the other social sub-systems composing society. Such an aim can only find a satisfactory outcome in the framework of multidisciplinary research.

b) Systems approach

What we have intitulated "system approach" is an exact procedure which should not be confused with the techniques used for the analysis proper. This method is applicable to different objects, to sub-systems placed at different levels of the whole. Quantification is not called for at every step of the method and the techniques used for quantification can be different (actualisation, multicriteria analysis, etc.).
c) Usefulness of systems analysis

Its usefulness has especially proved itself in the preparation of micro-decisions: for example, fighting against tuberculosis, eliminating "trouble-spots" on the roads ... It has contributed to a better analysis of elements such as: the objectives aimed for, necessary means involved, role played by the time factor, criteria for decision-making ... It therefore has helped towards decision-making. But there is no reason why this method should not be extended to the whole of the planning process, as long as the method is adapted to its object.

d) Difficulties in arriving at a synthetic approach

However elaborate the systems analysis is, it does not easily integrate elements such as the degree of dependency of a society, degradation of administration through corruption, the burden of rituals and traditions (such as funeral rites for instance), routine, etc ... Too often, social phenomena are dealt with in terms of action. Most models encourage this tendency, when in fact, only a "biological approach" can take into account the abundance of social factors. Furthermore, these models presuppose a normal and rational society, whereas the latter tends to be, most often irrational and pathological; it should be possible to take into account "negative variables", such as smuggling, corruption, or another important indicator, such as the number of people in prison, etc ... Finally, the model does not consider spatial dimension, and it is necessary to link regional plans, plans by urban centres to the national plan, etc ... In general, sociologists are not against building models but they wish more attention were paid to the data actually used in formulating them: in developing countries, problems are more acute than in developed countries where structural changes have already occurred: developing countries must take into account economic and social variables while at the same time they must bring about social change, though frequently there is some doubt as to what the structural changes should be. Societies are not sufficiently well organized to translate into concepts the necessary choices and then to carry these out. What the value system of the society as a whole is, and what values it is now ready to accept, is a question which has not been sufficiently explored.
1. 3. Possibilities of applying simulation models to development planning

I. 3. 1 Mr. Skolka's report

The aim of Mr. Skolka's paper was to set forth different questions such as:

a) Simulation is now applied to the solution of various problems, but what are the possibilities for applying simulation to social development? How should the task be approached?

b) Social development:
   (i) How to define a society? (boundaries, integration, disintegration, domination);
   (ii) What is development? - Any change; conscious change; can development be negative; who determines the values?

   The advantage of simulation is that value judgements can be avoided in the construction of models. Value judgements come only in the process of analysing the results of alternative solutions.

c) Social development has to be decomposed. The following aggregate components at least have to be considered:
   (i) natural environmental development;
   (ii) population development;
   (iii) economic development;
   (iv) development of the social structure;
   (v) development of the political structure and the influence of ideologies.

d) All five components are interrelated, for example, simplified but derived from the historical experience of developed countries. Are the models used in those countries appropriate for developing countries, or should they be considered simply as historical experience? The period of industrialisation was no golden age in Europe.

   Simulation, of course, allows us to consider and study paths of development different from those followed in the past by now "developed" countries. The concept of extended consumption should be considered. Present simulation methods are too "equilibrium oriented" to enable the prediction of conflicts.

c) Interrelations between components of social development:
   (i) interaction between societies - domination, independence, demonstration of success;
   (ii) loading components and feedback effect;
   (iii) conflicts

f) How to proceed in the simulation of social development:
   (i) outline of the problem;
   (ii) interactions between components - matrix of interrelations, not formalised:
(iii) review existing models of different fields of research - most likely not compatible;
(iv) study compatibility of concepts - economics, sociology, demography, political science, etc.
(v) establish data base
(vi) analyse relation between components:
(vii) construction of models:
(viii) simulation: a cautious approach should be adopted, avoid overestimation, flexible method: effort should be coordinated on various fields of application - discussion.

I. 3. 2 Discussion

The discussion outlined a certain number of interesting points presented on the following lines:

A. A Global Model

a) Scope of the model

There has been general recognition of the importance and usefulness from a planning point of view of a global model that could include all aspects of economic and social development. Nevertheless, participants emphasized that actual knowledge does not yet permit the construction of such a model, even one that seeks to simulate Western industrial societies for which there is both experience and information. There is obviously a need for furthering research in this area and certain propositions were set forth. Those took the position that a global model, simulating the development of a whole society, is in effect a system of more limited models, sectoral in nature, but susceptible to inter-relations that permit one to see a coherent whole.

b) A system of models is not the sum of its parts

The construction of a global development model might find its analogy in biology. Within living organisms, the parts, members or organs do not exist separately but only in relation to the function they perform. But beyond this the organism itself is a whole which is different from its parts. The same is true of society. The simple sum of the constituent parts or of its sectoral aspects do not really represent the society itself, which is richer and more complex than the sum of its parts. A development model on a global scale cannot therefore be constructed mechanically through the simple addition of sectoral models but must encompass and simulate a larger reality which is not only the society itself, but a society in the process of change under the pressures of economic growth and social evolution.

Thus we come up against the problem of integrating sectoral models within the global model, in other words, interrelating the different processes of evolution of the society in question. At the present time, knowledge of this subject is not sufficiently developed, and it is necessary to increase understanding through further research.

Firstly, theoretical studies will have to be carried out on the elaboration of new concepts which are representative of these inter-
relations. These concepts must be:

(i) of an inter-disciplinary nature, since the inter-relations in question are made up of extremely complex social factors, veritable links between several social aspects or sectors, each one being connected with a different breach of the social sciences (ecology, demography, economy, political science, psychology, anthropology, etc.). In order to illustrate this idea, certain participants spoke of the need to formulate, for example, economic concepts expressed in social terms.

(ii) in a position to define the changing character of these inter-relations, which in fact do not constitute fixed entities, but rather social factors in a state of evolution, while their related aspects or sectors are evolving. Let us not forget that inter-relations and aspects reflect phenomena of social behaviour which, as time goes by, spread and become modified.

(iii) free from a priori judgements of their value, or ideational viewpoints, which are consequently objective. This does not mean that judgements of value are not part of development planning. But such judgements must only be made when there is a choice between alternatives, and not when it comes to defining these alternatives, which must be carried out with the greatest possible objectivity.

The mathematization of these inter-relations, which is indispensable to the construction of a global model, is a separate problem. It is not always possible to say in advance whether such mathematization will be possible. But this difficulty is not really an obstacle. A continued effort must be made to mathematize the inter-relationship of sub-systems. It is always extremely useful to be in possession of quantified scientific data, even if it is of an approximate nature, in order to examine and discuss planning problems. In all cases where direct quantification of a phenomenon or aspect is impossible, indirect quantification should be attempted, for example, by measuring its effects or by using certain significant indices or indicators.

The PRIM Norwegian model may be taken as an example to illustrate these ideas.

A global model must also take into consideration and simulate foreseen social evolution, especially in view of the unified approach to development. This operation meets with serious difficulties. The Second Development Decade is an illustration of this need and these difficulties. It was organized by planning experts, but the result of their work does not appear entirely satisfactory. This is due to the difficulty of translating economic development phases into models and of integrating these phases into the desired social change. Adequate concepts and models simulating the changing social structure do not exist for the accomplishment of this task.

In analysing the relationships between the components of social development, the common bias "of equilibrium orientation" of most mathematical models developed up to the present time should be avoided and sufficient attention should be paid to contradictions and conflicts in development. The case of India was quoted as an example at the time of the first plan: the only historical precedent is the Soviet plan.
The application of this approach to economic development took place in an extremely different social context, presented by the public and private sector, democratic system and freedom of association and was aggravated by the fact that it was necessary to integrate social patterns inherited from the past with the desired structural changes. The main task of the application of the simulation to the analysis of social development should be to detect emerging conflicts and to advise planners as to how to avoid them or diminish their effects. In the analysis of emerging conflicting situations, some sort of "games", i.e. panel discussions of experts from different fields, based on results provided by simulation models, might be very helpful.

B. Specific problems encountered in the formulation of simulation models

a) Multi-disciplinary approach

This problem, which has already been mentioned in preceding paragraphs, is of fundamental importance. The direction to be taken in finding a solution is found both on a theoretical and a practical level.

From a theoretical point of view, or rather from an epistemological point of view, integration of the results of research carried out within the framework of each separate branch of the social sciences into a coherent whole certainly cannot be effected by simple addition or juxtaposition. Methods and concepts especially elaborated by oriented epistemological research are necessary. Only a limited knowledge of this field is currently available.

From a practical point of view, therefore, one should plan to entrust the study of each problem of planning multi-disciplinary teams working on the integration of the different branches of the social sciences, to current research, and this according to a well-coordinated schedule. Multi-disciplinary training of planning specialists could be another solution to this problem.

These measures also go along with the present-day tendency of research training and of applied social science, to abandon an individualistic, disciplinary approach, and to strive towards collective efforts using simultaneously several representatives from different branches of the social sciences.

b) The problem of measurement

The practical application of simulation models presupposes the existence of certain necessary numerical data in order to estimate the model's parameters. The collection of these data can only be undertaken once the finished state of the model and the concepts to be utilized have been established. It is at this stage that the model may be adapted to the data obtained. The actual collection of numerical data, however, is not always easy.
(i) Firstly, there are cases where it is impossible to measure certain factors directly, as has already been mentioned. On the other hand, these factors may be measured indirectly. The structure of power is one example. If there are no direct data, it is possible to measure income per capita of the population, electorate, distribution of investments, access to higher education, etc. The work of certain economists (e.g. Keynes or de Stone) shows that it is always possible to obtain indirect data.

(ii) In other cases data collection is impeded by the negative attitudes of governments or of certain social categories which refuse to supply necessary data.

(iii) Another difficulty is caused by lack of statistics and their incomparability.

(iv) Finally, the collection, and above all the systematisation of data are costly and require qualified personnel who are not always readily available. Studies of a "costs-benefits analysis" type are to be recommended for the clarification of the financial aspects of collection and elaboration of data to be used in development planning in certain countries.

When choosing and evaluating the importance of data to be introduced into simulation models, it is important to ensure that these operations do not contain any judgements of value or ideological viewpoints - which would detract from the model's objectivity. A specific checking operation should be implemented at this stage to avoid this risk.

Data must also be collected which permit the incorporation into the model of elements concerning the forecasting of the effects of a possible choice between two possible alternatives - positive effects as well as negative ones (social and human cost of growth and development).

C. Conclusions

The simulation model method has been used up to now for planning in industrialized countries. It is essential that efforts be made to adapt the method to the realities of developing countries before its application.

Numerous participants expressed doubts concerning the implementation of this method (while at the same time recognizing its usefulness) in Asian countries without first adapting it to local realities.

The participants, finally emphasized the necessity of producing one simulation model for each country concerned and of avoiding using models constructed for other countries and more especially for industrialized countries.
1.4. Applying evaluation techniques to the "social" aspect of development planning

1.4.1 Report by Mr. S. N. Mishra

Evaluation understood as a continuous process, gives the planner a means of controlling the validity of his first hypothesis and of correcting his programme if the latter is not bringing about realization of the objectives originally fixed.

Dr. Mishra in his presentation said that the purpose of the paper was just to provide the basis for discussion. The scope of the paper was narrow in the sense that it covered the problem of ex-ante evaluation. The other limitation of the paper was that the concept of evaluation used in it is economic and it excluded the social factors from consideration, which Unesco will like to emphasize.

1.4.2 Discussion

Several observations were made on Dr. Mishra's paper in the course of the discussion. It was suggested that interdisciplinary approach must be thought into the evaluation of development programmes. In many cases, it was suggested, project boundary may be difficult to draw. In other cases, such as projects with research objectives, say for example, coo breeding or nuclear research, it may be very difficult to forecast the benefits. It was, therefore necessary to modify the existing evaluation techniques or to develop new techniques in order to tackle such problems. It was observed by some members that concurrent evaluation of development projects was equally important. While the currently available management techniques like PERT, that work analysis, etc ... could be fruitfully used, their orientation to Asian conditions was also necessary. Dr. Mishra in the course of his reply accepted these suggestions. Some members felt that instead of the ex-ante, the ex-post evaluation should have been given more attention because it is at this stage that social sciences have greater scope for contribution to development planning. The difficulties in using a monetary yardstick to measure results of certain projects seem to have been sometimes overestimated. Thus, for education, where individual and social outputs are measurable thanks to several types of indicators. There again, the social area covered by the passage of project to programme (which is in fact a group of projects) and from the project to the sector, and from there on to the whole, will be the determinant factor of the evaluation technique's efficiency. Another point considered was that of the evaluation structure. Must the central planner decide, at the onset how resources are to be allocated between the different social sectors (education, health) who then have no choice but to accept, or should there be an iterative process functioning between these different levels?

The limits set for the projects determine if acceptable economic results can be obtained even if secondary and tertiary effects
are neglected. But in the social sphere such an option seems unthinkable: for example how can three projects be linked, each related to a different object such as a road, an urban development project and building a dam?

For each project one must take into account objectives - and their scale - specific to the programmes and the sector concerned as well as other series of objectives, and these must be linked as a whole. For example, education depends on the labour policy which in turn is dependent upon the production programme. In the field of medicine a doctor must take into account the will-power of his patient: even when they are drawing up programmes, governments are only mildly interested in evaluation techniques. Finally the problems which arise in the relationship between the Central Planning Office and the administrators responsible for the plan's implementation were discussed.

Later on in the discussion it was pointed out that the papers presented only dealt with specific cases and that in the future, a broader agenda would be desirable. This last point will be reflected in the recommendations.

II. RECOMMENDATIONS

The discussion of the three papers presented at the symposium led to a definite broadening of the suggested themes. The study of systems analysis, of simulation and evaluation techniques brought forth a set of general recommendations, on the one hand, concerning research, training, collection of data and interdisciplinary communication, and on the other hand to specific recommendations concerning techniques for socio-economic planning. The tendency which emerged at the end of the symposium was definitely a very practical oriented and operational one.

1. General recommendations

1.1 Research

1.1.1 Setting up research

1.1.1.1 Should consist in multidisciplinary work and, if possible, in the integration of social sciences (economy, sociology, ethnology, etc ... ) into one single discipline. This implies that basic concepts should be clarified, a common axiomatic be elaborated and that the terminology for the different disciplines concerned be unified.

1.1.1.2 This also requires that the techniques of mathematics and the "exact" sciences be shifted to the field of the social sciences, and therefore hasten the promotion of a genuine socio-economic science.
1.1.2 Inventory of the state of social science research in Asia

A survey of this type should reveal the state of research in the field of social science at the present time, in Asia, and help this science's contribution to development. It should also eliminate the errors due to hasty transposition or imitation of research designs or techniques from developed countries.

1.1.3 Research methods

Research on socio-economic development must proceed simultaneously on the two following levels: theoretical (general research designs - mathematical model) and practical (empirical analysis, study of sectoral and regional cases).

Empirical research must also concern itself with the process of social change in developing countries, and more especially in Asia. A better understanding of this process certainly will depend on the extent social sciences are able to contribute to the efficiency and realism of development techniques.

1.1.4 Development planning

Theoretical and applied research must be undertaken by experts from the regions to be developed. This research will specify the character development planning must take, how to adapt or reject the tools worked out in developing countries and eventually will create more satisfactory tools for the different levels of development.

1.2 Training

1.2.1 Multidisciplinary and scientific training

Training will be very much improved by making more readily available multidisciplinary teaching, which would include a certain number of fields, such as are indicated in the list given below, as an example:

1. Social history of science and technology
2. Future of technological society
3. Science and international relations
4. Technology and public policy
5. Probability, statistics and stochastic processes
6. Reliability theory and graph theory
7. Combinations
8. Linear algebra and matrices
9. Dynamical systems
10. Mathematical economics
11. Planning
12. Optimal control applied to economics
13. Theoretical and applied game theory

(The list is suggestive rather than exclusive)
Such a training is particularly adapted to specialists who already have a solid background in one of the fields of social science, but an insufficient knowledge of the others.

1.2.2. Formation of new specialists

There is urgent need to train a new kind of specialist which, for the lack of a better term, may be called "comprehensive planners". The chief characteristics of such a specialist include the following:

(i) he must be a specialist in one relevant discipline, e.g., economics, sociology, engineering, demography, human ecology, etc.
(ii) he must also be well grounded in the theory, technique, and practice of planning. (This inevitably means that he must have sufficient training in quantitative techniques);
(iii) he must have some knowledge and understanding of related fields of social sciences in order to coordinate the work of the various experts needed in development planning;
(iv) in addition to academic training, he should be exposed, in the process of his training, to the operational aspect of planning.

1.2.3. Unesco and training

Unesco has an important part to play in establishing these structures for training, taking into account what is being done in the field of planning by the United Nations and by the other specialized agencies. Mainly, Unesco shall have to help developing countries avoid the mistakes made by developed countries in their own development plans.

Unesco should support:

i) development of interdisciplinary studies in Universities, specially after graduate students have acquired their Master's degree in one of the social sciences or allied disciplines;

ii) promotion of research in social sciences related to comparative development planning;

iii) support additionally existing institutions engaged in training of planners and development administrators specially in the areas of interest to Unesco, and

iv) set up a standing committee of Asian social scientists to advise Unesco on teaching, research, training, and institutional support to social science aspects of development planning.
1.3 Collecting data

Once the semantic effort defined under 1.1.1. has been effected, means of determining data, units, lists, aggregates and their collection must be ensured, keeping in mind their use for social indicators (education, health, environment, quality of life). This data must indicate direct and indirect costs as well as the positive or negative results of activities. Dissatisfaction and ineffectiveness must be recorded to the same extent as are the elements favorable to development.

1.4 Contacts between researchers

1. Unesco should hold periodical conferences of Asian social scientists (with participation of social scientists from other developing countries) to consider the "actual state of the arts" with reference to development planning, to discuss some selected themes related to development planning, and to make recommendations regarding further action to be taken by Unesco to promote study and research in social sciences.

2. Unesco should hold periodical conferences of Asian social scientists (with participation of social scientists from other developing regions) to discuss various aspects of "imitative thinking".

3. Unesco should set up:

i) a Library of social sciences (specially of books and journals from developing countries)

ii) a Documentation centre relating to social sciences which should provide reference services, abstracts, and translations, and

iii) a clearing house relating to all activities in the field of social sciences in the Asian region, specially with reference to development planning.

4. Unesco should establish a "Publication House" to bring out books written by social scientists from developing countries.

5. Unesco should provide subsidies to Asian social scientists to bring out their publications related to development planning.

6. Unesco should launch a project to evaluate the adequacy of existing research institutions and teaching materials with a view to creating a science of development studies based on planning problems encountered in the region.

A survey should be undertaken by Unesco, along the lines of the one suggested under point 1.1.2, on the present state of teaching and training in the field of social science so as to promote an approach adapted to development planning.
2. **Special recommendations**

2.1 **System analysis and simulation**

The role of social scientists is to stress the inter-disciplinary linkages and to create common language and mutual understanding of various methods used. It was agreed that:

1. System analysis is potentially a very useful tool for development planning. Efforts should however be made to explore the possibility of increasing its usefulness when applied to problems which are not readily quantifiable.

2. As a technique, simulation is useful only for problems which are well defined. At the present state of knowledge however, efforts should be concentrated on field testing of the technique in sectoral economic and social development projects and programmes.

Unesco should concentrate its effort on the following three topics:

1. training of planners should insist on inter-disciplinary approach, which would allow specialists from different fields to communicate

2. survey on the use of system analysis and simulation in the Asian region and dissemination of the experience gained. Attention should be given to the popularisation of results

3. Unesco should organise seminars on the use of system analysis and simulation models. Both researchers and practical planners from different fields should participate and use games and heuristic approach in evaluation of alternative results provided by various models.

2.2 **Application of the evaluation methodology to development planning**

1. The application of evaluation techniques to development planning is extremely important.

2. The evaluation techniques should be applied at all the three stages of planning e.g.

   i) the ex-ante or preinvestment stage

   ii) the concurrent or on-going stage

   iii) the ex-post stage.

3. The social sciences must contribute to the conceptualization of the role of evaluation in the socio-economic development and development of methodologies of evaluation for all the above mentioned stages of evaluation.
i) especially at the stage of ex-post evaluation, social scientists drawn from institutes and universities should be associated with the work of evaluation

ii) Unesco should assist the Asian countries in respect of research in these concepts and methodologies

iii) the direction of research should be along the following lines:

   a) extension of the benefit-cost analysis to include non-monetary factors and development of other techniques
   b) study of the relationship between evaluation objectives (e.g. efficiency, equity and political feasibility)
   c) the relation of the objectives of development with the levels of development
   d) study of special problems related to projects of the following kinds:

       1. projects with very long life
       2. projects and programmes where the benefits as well as cost are largely dependent on the expectation and responsiveness of beneficiaries
       3. projects which have research objectives.

iv) On-going or concurrent evaluation should use the management techniques currently available and should develop new techniques applicable to Asian conditions

v) Unesco should promote specialized training in project evaluations with academic institutions and universities in the Asian regions. These trainings should be organized in the following three categories:

   a) in-service training for planning workers
   b) pre-service training with emphasis on project formulation
   c) post-graduate diploma course in project and programme evaluation with inter-disciplinary approach to be organized in academic institutions and universities.

vi) The academic institutions and universities in close cooperation with planning agencies should be encouraged to undertake research in evaluation methodologies with inter-disciplinary approach.