

No. 3

ADMINISTRATIVE ARRANGEMENTS FOR INCREASING  
EFFECTIVE PLANNING SYSTEMS

September 1975

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## C O N T E N T S

- I. Introduction
- II. Types of National Development Plan
  - 1. Types of Plan
  - 2. Problem of Integration
- III. Interdependence of Planning and Implementation
  - Rolling-Plan System
    - 1. Use of Planning Model
    - 2. Controlled Variables -- Quantified Policy Measures
    - 3. Target Variables
    - 4. Indifference from Political Preference and Flexibility for Alternatives
      - (a) The Role of Research Institute for Planning
      - (b) Flexibility for Alternative Plans
    - 5. Operationality in Plan Implementation
    - 6. Use of "Rolling-Plan System"
    - 7. Fiscal and Monetary Authorities in the Rolling-Plan System
    - 8. Rolling-Plan for Longer Perspectives
- IV. Politics and Planning
  - 1. Political Support
  - 2. Political Interventions and Counter-Measures
  - 3. Understanding of Planning Process

V. Linkages of Central, Sectoral and Regional Planning Systems

1. Need for Coordination

2. Policy Measures

3. Organization for Sectoral Planning

4. Organization for Regional Planning

VI. Concluding Remarks

Appendix :

Curriculum for Development Planning with Special Reference  
to Policy and Management Sciences in University of Tsukuba

## I. Introduction

Recent increasing importance in management and administrative aspects of national planning has been emphasized by many people engaged in development program of developing countries. They are particularly stressed due to gaps between plan and implementation, rigidity in responding to recent rapid changes in external environment, increasing administrative costs in implementing development programs, etc.

Many efforts of the U.N. and other organizations to encourage administrative efficiencies are mostly focused on implementational aspects of planning and they seem to be successful in enlightening the importance of management and in guiding developing countries to reform their administrative structure and to strengthen financial capabilities to implement the development programs. [3][4][5][6]

The purpose of the present paper is to focus more attention on a problem of the relationship between plan formulation and its implementation in terms of feasibility and flexibility of planning. The administrative aspects for this system are to be discussed in detail and the advantages in using empirical planning models are examined in the context to organizational and management issues in public sectors.

## II. Types of National Development Plan

### 1. Types of Plan

In dealing with the issues in planning and implementation, we first need to discuss the various types of development planning. This is particularly important in considering interdependency and consistency among these plans which are usually formulated by different public organizations.

In terms of length in planning period, we have a) short-term, b) medium-term, and c) long-term plans. In regard to sectors, there are a) macro-plan, b) semi-macro plan consisting of two or three aggregative divisions, and c) comprehensive multi-sector plan dealing with many sectors.

In terms of space, we have a) comprehensive multi-regional plan and b) specific regional plans for strategic areas.

Among the above, the first type of categorization with respect to the length in planning period is naturally the most important, as the relationship between planning and implementation can be best dealt with in this context. The medium-term plan usually covers four or five years, representing a typical example of national development plan in developing countries. The short-term plan is

concerned with the annual plan which the fiscal authority deals with in most countries. Because of its direct link to annual fiscal budget, the medium-term plan is usually implemented through this annual economic plan. The long-term plan generally covers ten to twenty years with more flexibility and uncertainty, but it provides a basis for a) planning of key sectors in public investment and b) framework for education and training of man-power.

It can also be stated that the medium-term plan relates to the implementation aspects of key public investment projects just like the short-term plan which in most cases deals with implementation of the medium-term programs. There is, however, a difference between the two relations, since the binding force of the long-term plan is usually weaker than that of the medium-term plan which is regarded as most official development plan in many developing countries.

While most of the short-term plan deals only with aggregative demand management through fiscal and monetary measures, sectoral aspects of development program are covered by both medium and long-term plans in view of the importance of sectoral supply capacities. It is also noted that administrative and organizational issues tend to be more complicated and various types of coordination are needed in formulating and implementing those

sectoral plans. The political leadership of the government and administrative capacity of coordination by central planning organization and fiscal authorities become important in the face of different political interests in various sectors.

A similar tendency is found in regional development planning which also covers medium- or long-term period. The need for coordination of various regional interests is as much important as in the multi-sectoral planning mentioned above. In administrative levels coordination is required between central and local government, as the regional allocation of social overhead is regarded as a key issue in the planning.

## 2. Problem of Integration

Although the national development plan relates to various aspects including, sometimes, even social and political reforms, the lack in consistency between various levels of plan likely result in confusions in implementation of these different plans. Though in highly aggregative terms, these plans need to be coordinated with each other as much consistently as possible in quantitative terms, such as real GNP, total investment, total population and employment, per capita real consumption, etc.

Statistical informations, especially those for major sectoral and regional levels, are regarded as essential and

administrative arrangements through fiscal measures and training programs for statisticians play a vital role in both planning and its implementation, as discussed later.

Finally, the degree of the integration tends to vary according to the sophistication of planning techniques and availability in statistical data. Flexibility, however, is also needed in view of likely changes in future environments especially in the case of long-term or regional development planning. This implies that, as stated later, the planning techniques are flexibly utilized in the face of changes, although the plans in different levels need to be consistently organized and, preferably, integrated into a single system.



### III. Interdependence of Planning and Implementation

#### -- Rolling Planning System

##### 1. Use of Planning Model

The plan, at whatever levels, needs to have its own targets which should be clearly defined, preferably in quantitative terms.<sup>1)</sup> The same is true with its instruments, such as amounts of investment, money supply by central bank, rate of tax, rate of foreign exchange, etc. In Timbergen-type approach, these interrelations are usually indicated in an econometric model in which the effects of these policy instruments as well as changes in external factors such as world trade can be shown in quantitative terms. Accordingly, evaluation of different policy instruments is enabled as compared with the planning targets.

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Note: 1) There are some planning targets which are qualitative, such as ethical standards, national prestige, social integration, etc. Those are usually difficult to be quantified. While their relationships between targets and instruments are empirically identified, the quantitative effects are uncertain.

Unlike many alternative and more descriptive approaches, the planning model approach has definite advantages as follows:<sup>1)</sup>

- (1) clear distinction between controlled and uncontrolled variables
- (2) quantification of major target variables
- (3) indifference from political preference
- (4) flexibility in formulating different policy alternatives
- (5) operationality in evaluating gaps between plan and implementation
- (6) use for rolling-plan system

Although there is a greater requirement for statistical data than other approaches, it should also be noted that the adoption of model approach tends to rationalize the national statistical system and to facilitate a selective improvement in such information systems. In the following the above six advantages will be discussed in more details.

## 2. Controlled Variables -- Quantified Policy Measures

In the planning model we have controlled variables or policy instruments which are treated as exogenous in the model. By changing those variables the model provides different endogenous variables among which target variables

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Note: 1) See, for instance, [1]. [2].

play a vital role in the planning. It is one of the greatest merits of the model that administrative responsibilities can be clearly defined in quantitative terms and be followed easily in different stages of implementation, if the model covers intermediate periods as well.

There is a tendency, however, that fiscal and monetary authorities tend to be reluctant for being linked to medium-term plan in fear of overcommitment. About such tendency we shall be more specific in later sections.

### 3. Target Variables

In order that the plan be specific, most of the targets should be clearly defined and quantified. While politicians tend to show too ambitious targets in quantity, use of the model generally prevents such tendencies on the ground of empirical evidence and feasibility. This is particularly the case when the model is designed in such a way that critical areas for development or scarce sources are explicitly introduced and made available for objective evaluation. They are, for example, number of skilled worker and engineers, maximum limit of unemployment, balance of foreign exchange reserves, minimum level of living conditions, etc. These constraints as well as policy targets are open to the discussions of different interest groups in a democratic political process. Regardless of their political system, decision-makers and

expert groups should be well <sup>informed</sup> ~~understood~~ about these boundary conditions which are critical for achieving the targets.

Besides ordinary economic policy targets such as per capita income and consumption, etc., a recent trend in planning tends to include social aspects such as income distribution among different socio-economic groups, number of students and teachers for primary and secondary education, number of hospitals, nurses and doctors, number of housing units, etc. This trend implies that the planning model needs to be more multi-purpose and multi-sector - oriented so that the resources should be allocated for these purposes more effectively. The trend also requires closer collaboration between planning organization and other administrative agencies dealing with various social development projects such as planning for education, medical and health conditions, urban and rural development, etc.

#### 4. Indifference from Political Preference and Flexibility for Alternatives

Theoretically, the planning model per se does not reflect any political preference. While it includes the various inter-relationship between exogenous and endogenous variables, the model can provide any desirable set of policy targets based upon specific policy instruments.

The structural parameters in the model need to be objectively measured, but they are always indifferent from any political choice. It is due to this nature that the model can be utilized for deriving as consistent targets as possible.

The government organization dealing with this kind of technical and analytical work needs to be neutral and, preferably, independent from decision-making and coordinating functions of planning and implementation. In most cases the central planning organization or related institute is concerned with this analytical work in collaboration with a technically advisory committee of scholars and experts in econometric and other quantitative techniques.

(a) The Role of Research Institute for Planning

There are two essential issues with respect to these analytical functions. First, the results of these analytical works should be made available to any public outside of the government. It is important for the government to publicize that the planning method is not the work of confidential nature among the government techno-crats but is an essential tool for national participation in planning. This consideration leads us to the necessity of having an independent research institute

sponsored by the government which is specialized to planning techniques and development strategies. There are many examples of such organization in developed and developing countries. These research institutes keep a close contact with the central planning agency but have rather independent functions in developing planning and management techniques and can provide planning models in case of formulating development plans. These institutes tend to publish the results of their research and to organize task force for planning models in close contact with universities and other research organizations. In this case the responsibility of planning techniques is assumed by that research institute which has usually high social prestige in technical aspects of planning. The role of the central planning agency can thus be focused on the issue of highly political and coordinating functions. A "black-box" type image of planning tools can thus be avoided and neutrality of planning techniques will be enhanced.

(b) Flexibility for Alternative Plans

Once its publicity and neutrality are properly secured, the planning model might be utilized for providing various policy alternatives. Ideally the model should be simulated with a highly powerful

computer, but most of developing countries have limited access to those opportunities. While it is an important subject of international technical aid, the model should at least provide four basic alternatives:

- a. pessimistic environment under normal development policies
- b. pessimistic environment under dynamic development policies
- c. optimistic environment under normal development policies
- d. optimistic environment under dynamic development policies

These four basic alternatives are subject to further adjustments according to alternative social preferences such as income equality vs. economic growth, education vs. health, export vs. external aid, etc. Since this extension naturally requires more disaggregated models and more resources in staff, data and facilities, the planning machinery tend to become bigger and requires closer collaboration of different government agencies.

In case of a sophisticated model equipped with a highly powerful computer, the model can provide as many alternatives as possible for very short time so that the model can be utilized in a "conversational

way" by any people who want to participate in plan formulation.

Although this appears to be a little too fantastic in developing countries, the amount required for such investment in informational activity might not be unduely expensive as against the huge physical investment in social overhead which, some times, tends to be wasted in the absence of precise information.

#### 5. Operationality in Plan Implementation

The use of planning model has a definite advantage in plan implementation, since the gaps between the planned and actual variables can be systematically analyzed.

These gaps are first distinguished into three groups i.e., those of (a) datum variables (b) policy variables and (c) target variables, and the gaps in (c) can be quantitatively attributed to (a) and (b) as below:

$$T_i - \hat{T}_i = \sum_j \alpha_{ij} (D_{ij} - \hat{D}_{ij}) + \sum_k \beta_{ik} (P_{ik} - \hat{P}_{ik})$$

Where  $T_i$ ,  $D_i$  and  $P_i$  denote target, datum and policy variables, respectively in  $i$ th target variable, while  $\alpha$  and  $\beta$  denote reduced form parameters of  $D_i$  and  $P_i$ ; and variables with hat on top denote planned values whereas those without hat on top actual values. For example, the gap between planned and actual values in exports can be



attributed to those in external environment such as world trade and foreign export prices and policy variables such as exchange rate, discount rate of central bank, public investment, etc.

In executing planned targets, adjustment of policy variables sometimes becomes necessary when the gaps grow significantly due to external factors, or structural changes in parameters. In case, however, where these changes are wide enough to require some basic changes in originally planned targets, planners are usually faced with the need to replace the plan by newly updated information.

There are three alternatives for planners in such case: (a) to replace the plan for the one in the same target year, (b) to replace the plan for the one for next five-year period and (c) to move ahead the target year only two or three years with almost the same model but based on new datum and policy variables.

The choice among the above three is made usually on the basis of political and social considerations. When the gaps are partly significant, choice (a) will be preferred, while choice (b) will be taken in case where most of strategic targets become seriously obsolete and need drastic revisions. From the point of view in favor of gradual improvement and continuation of planning efforts, choice (c) would be most desirable as it requires the same

tools, thus reducing the cost for an entirely new formulation. In the following section, we shall be more specific about this type of planning, which is often referred to as "rolling plan" or "revolving plan" system.

#### 6. Use of "Rolling-Plan System"

There are several advantages for using rolling-plan system.

Firstly, because of more frequent revisions than the other alternatives, the values of planned targets can be adjusted to more realistic ones. Although the rule is not strictly given in medium-term plan, every second or third year is regarded as the year for solving the planning period. In this system unrealistic values for targets are automatically adjusted and updated on the basis of current information on <sup>the</sup> datum policy variables. The most important feature of this system is the current feed-back from actual implementation to newly revised planning targets. With the length of planning period remaining the same, the planners and political leaders are accustomed to the planning and implementation so that they can follow the way for gradual improvement in development policy.

Secondly, this system is better suited than other alternatives to improve the mechanism of planning model in the light of actual performance. This is because the predictive errors can be identified easily in quantitative

terms in the course of planning and implementation, as shown in the above formula. The results of this follow-up of the model performance should be made available especially to outside users so that more collaborations can be expected from those scholars and experts on planning techniques and statistical data. This merit of the rolling-plan system becomes clear when it is compared with other planning model which is not built in the frame of the rolling system. However elaborated in the specification of the equation system, the model in the latter case tends to become much less effective because of the lack in the interdependence of planning and implementation.

Thirdly, despite frequent adjustments, the rolling-plan system can save substantially the cost involved for maintenance, since large part of the work such as data collection and reestimation of structural parameters can be made as a routine for planning and the planning experts can concentrate in <sup>on</sup> further improvement of their development strategies and planning models.

Fourthly, the rolling-plan system would be better suited to the independent research institute for planning as mentioned earlier, since the institute can obtain more technical man-power including programers<sup>and</sup> and computer experts than the central planning agency because of its independence and closer contacts with academic circles.

The central planning agency, being located close to the cabinet, tends to be heavily involved in administrative affairs at the cost of the negligence of deeper analytical research.

The rolling-plan system, however, may have some difficulties in actual performance. In case where a drastic reform is needed in social and economic structure, the structural relationships based on the past performance do not reflect a likely pattern of change in the planning period. For instance, wage-price relationship based on the past period may not continued in the case of government decision to control wage and prices. A similar case can be found when certain items of imports have become subject to import quota. The introduction of land reform which the country has never experienced with might affect the productivity of agriculture, whose effects can hardly be quantified.

Those difficulties can sometimes be overcome by using dummy variables, further disaggregating sectoral basis, or borrowing data on structural relations from foreign countries.

While these difficulties are not specific to the rolling-plan system but common to any planning model, there is another problem which is rather peculiar to the former as against the latter. That problem arises when the statistical time series are revised substantially due to the changes in the estimation methods or newly available census data. In this case the model has to be reestimated or revised thereafter

in terms of specification. Besides, the follow-up studies on the gaps between the planned and actual values encounter with serious difficulties due to the discontinuity of those statistical series. While time and resources involved in dealing with such problem tend to be an obstacle for continuing this rolling system, these difficulties can be met partly with the aid of statistical agencies by readjusting these series on comparable basis.

This indicates that the rolling-plan system requires full collaboration of various statistical agencies and statistical experts in terms of availability, continuity and quickness in publication. If the research institute for planning has also the function of estimating national economic accounts as in Japan and France, it presents two-fold advantages in research for planning techniques and in securing the availability and continuity in key statistical series for development policies.

#### 7. Fiscal and Monetary Authorities in the Rolling-Plan System

Besides several administrative issues mentioned above, the most crucial issue in implementation is the relation between the central planning organization and fiscal-monetary authorities. Since actual implementation heavily depends upon the role and functions of the ministry of finance, or bureau of the budget, and the central bank which has sometimes the most influential power in many

developing countries.

Since our rolling-plan system requires mutual interdependence between planning and implementation, it is essential that the fiscal monetary authorities fully participate in formulating the macro-plan from the very beginning. While the director of the central planning organization assumes a more direct responsibility for the targets in the final year of planning period, the fiscal-monetary authorities usually assume responsibility for policies during intermediate years. Somewhat negative attitudes on the part of the fiscal-monetary authorities about long-term commitment to the plan can be improved in the rolling-plan system, since the system allows to change the targets and policy instruments more frequently and in a more realistic direction. In other words, the changes in their policy instruments are always allowed in the system if there are significant changes in external environment. A drastic fall in exports due to the world recession, for instance, will require a compensatory increase in public expenditures to prevent further rise in unemployment.

The second problem is related to the technical relations.

In order that the macro-plan be properly linked to the annual or short-term plan of the fiscal-monetary authorities,

the former plan must be accompanied by a disaggregated sectoral plan for central and local fiscal programs as well as financial-account program for money supply. The fiscal-monetary account for central government is most important among all and it serves as an essential link between the central planning organization and fiscal-monetary authorities. Obviously the account covers intermediate years as well as target years, and it should be preferably combined to the macro-planning model for short and medium-term operation.

With the aid of this model it is not only made easier for the planners from the two organizations to formulate their common targets <sup>but</sup> ~~and~~ to systematically analyze the gaps between the planned and actual values.

While the above link is more related to demand aspects of macro economic performance, there is another aspect which deals more with supply aspect of the link between the two organizations. The program budget system in this context has played a vital role in linking capital expenditures between annual and medium-term levels. Since this system is based on a more frequent rolling-plan system (i.e. moving ahead every year) and covers about five-year planning period, it plays as a core to integrate the annual implementation and medium-term plan in overall rolling-plan system. As the program budget system also

requires evaluation of alternative policies and outputs, the system is essentially a miniature for public sector in our larger system for rolling planning. The adoption of the program budget system obviously produces desirable impacts on fiscal planners in the fiscal authorities as it greatly facilitates the interdependence of planning and implementation and collaboration of the central planning and fiscal organizations.

The third factor in coordinating the functions between the two organization is related to a training and educational background. The mutual understanding between the two is often facilitated by joint training system in which short- and long-term planning experts from both organizations are trained under coordinated curriculum on fiscal-monetary policy, planning techniques and model operations. The role played by the training institute of the government such as ENA (École National d'Administration) or similar programs in many developing countries should be highly appreciated especially because the traditional conservatism of the officials in the fiscal-monetary authorities can be re-examined and improved in these programs in the light of longer and wider perspective of development policy.

This problem leads us also to consider the method of university education on socio-economic planning and implementation. Since the officials in most of the ministry



of finance are educated in the courses of public finance or public administration at leading universities, they have sturdy faith in the principle of balanced-budget and little opportunities for modern economics, management sciences, systems approach, etc., which are becoming more multi-disciplinary and problem-oriented in recent years. Thus it becomes one of the most strategic areas for development how to supply from universities highly trained planning experts who are equally needed for both planning and fiscal-monetary organizations.

While an example in Japan is indicated in Appendix, the essential measures in this respect can be summarized as: increase of courses in the <sup>field of</sup> share of (a) economic policy and planning, (b) social development, (c) statistical analysis, (d) management science, and (e) multi-disciplinary systems approach (or policy science).

#### 8. Rolling-Plan for Longer Perspectives

While the above discussions are mostly concerned with medium-term plan, there is a question whether the rolling-plan can be applied to long-term planning system for ten- or twenty-year period. As mentioned earlier, the long-term plan deals mainly with long-term strategies for development and places more emphasis on social overhead than on private sectors, and the models used tend to be more flexible because of many uncertainties in future and limitations in

the number of samples in the past. This means the rigorous follow-up with respect to the gaps between the planned and actual values is more difficult than in medium-term plan.

However, this does not preclude the possibility of using the planning model in a rolling system, as far as the specification of the model is clearly defined and continuity of the long-term data are properly ensured.

There needs to be some link in terms of periodicity between medium- and long-term plans. For example, in case when medium-term plan relates to four-year planning period, the long-term plan should preferably cover eight or twelve years during which the latter plan moves ahead in every fourth year.

For international comparison and cooperation, five-year period would be desirable as a basis for both medium- and long-term planning. In this respect, medium-term plan should relate to 1980, while long-term plan to 1985 and 1995.

As for administrative functions for long-term plan, the central planning agency or research institute for planning usually assume such responsibility in close contact with respective government agencies concerned with various public investment. The long-term plan provides alternative growth potentials and the amounts required for public and educational investment, which again forms the basis for government capital expenditures in medium-term plan.

#### IV. Politics and Planning

##### 1. Political Support

For planning and implementing social and economic development, the politics naturally plays an import role and it forms one of the essential cores for development strategies. In the absence of political support, any development plan, however fantastically formulated, is likely to lose its realistic bases and to encounter with many administrative difficulties. The strong political support is also important to maintain the planning system especially in case where the system is not formally based by strong legislative procedures as in the French plan which is subject to a parliamentary approval.

The rolling-plan system mentioned before can absorb almost any political changes in flexible way by adjusting targets and policy variables in response to new environment. In case, for instance, where a political preference shifts to social development from industrial expansion, a faster rise in income of lower income group and a slow-down in investment in industrial plants will be planned by changing policy variables within the same model on the same external assumptions. Besides, these changes can be introduced any time in the course of rolling-plan system.

## 2. Political Interventions and Counter-Measures

The political support, on the other hand, tends to produce unfavorable effects if it becomes too an aggressive and unorganized impact upon the administrative side of the planning system. It is for this reason that the central planning function of the government is located directly under the supervision of the premier or the president so that aggressive political pressures through various ministries or departments are prevented. The coordinating power of the cabinet is also important, since the function of central plan organization is rather administrative and technical and it deals much less with the political aspects of target formulation.

One of the most unfavorable impacts of political pressure is the ~~intervention~~ <sup>interference</sup> of politicians to the technical relationships or restrictions in such way that their targets have been adjusted to satisfy political ambitions. In case of too rapid planned growth, for example, a restrictive impact on the balance of payments caused by, an increased import might be adjusted by increasing export target, which, however, become inconsistent to the estimates of export function based on world trade and relative prices. Such an excessive political adjustment may also be made with respect to employment policy by reducing unemployment target without consistent relationship to production targets.

As stressed earlier, neutrality or some independence from such political influences is secured if the analytical research is carried out by research institute for planning which is located outside the central planning agency. As far as the director of the institute is appointed by the government, the institute can not, however, be purely independent. Thus there is a need for the government to enlighten political leaders and pressure groups with respect to the feasibility and consistency of the planned targets.

### 3. Understanding of Planning Process

As a concluding remark, it is essential that political supports of various groups be organized into ordinary channels such as those through parliament, administrative committees, etc. so as to prevent excessive interventions into planning systems. Furthermore, these efforts can be made more effective by retraining political leaders about the logics of planning and the relation between political and technical aspects. It is also essential to stress to those people about the dangers caused by the absence of consistency among planning targets.

Anyway, proper understanding and support by political leaders about planning and implementation process provides a basis for a sound development of planning systems.

## V. Linkages of Central, Sectoral and Regional Planning Systems

### 1. Need for Coordination

The need for coordinating different levels of planning has already been discussed in Chapter II. In order that the plan be realistic enough to ensure collaborations of various organizations, the central marco-plan needs to be linked to sectoral and regional planning. While recent development in planning techniques has enabled to provide powerful tools such as input-output model, gravity-type regional model, etc., these models require sufficient data which are not necessarily available in developing countries. Even in the absence of such data, conventional regression-type approach provides minimum-required coefficients at relatively low expenses, which can be utilized to keep consistency to certain extent between macro-targets and sectoral or regional targets.

Government agencies concerned with sectoral planning tend to formulated their planning targets on the basis of broader categories of sectoral estimates derived from macro-targets with the above tools. In the absence of such explicit link between the two levels, the total of sectoral supply targets tend to exceed total demand estimate derived by the macro-model, because sectoral planners are

less concerned about overall restrictions such as balance of payments, financial availabilities, etc.<sup>[7]</sup> A similar tendency is also observed for regional planners to formulate their regional targets whose national aggregate usually tends to exceed the original macro-estimate in the absence of the explicit tool for maintaining consistency between the two levels.

In most cases, sectoral planning is more concerned with sectoral output, investment and employment, whereas regional planning is more interested in per capita income differentials and distribution of social overhead. Ideally, the regional input-output matrix can deal with both sectoral and regional planning in the most consistent way, and such data requires much resources which only the government research institute for planning, mentioned earlier, can afford.

## 2. Policy Measures

Unlike the macro-planning, policy instruments for sectoral or regional planning and implementation are not usually identified explicitly. Some instruments, however, are utilized in quantitative terms. They are sectoral import quota or sectoral tariff rate, sectoral credit rationing in terms of bank credit, preferential corporate taxes or depreciation ratios, investment tax credit, employment promotion taxes, etc., all of which need to be

specified in terms of coefficients so that we can evaluate their sectoral impacts.

Regional plan also requires regional policy measures such as regional public investment, transfer income payments for less developed area, investment tax credit and financial aid for strategic areas. If the effects of those policy instruments can be quantified by empirical research, we can also analyze the gaps between the planned and actual values, as in the case of macro-planning.

The advantage of those research<sup>activities</sup> is that the responsibilities of sectoral or regional planning agencies can be indicated quantitatively in terms of policy variables and thus the implementation of the plan can be improved in more realistic way. Although the sectoral planners tend to attribute the gaps in implementation to those in macro-plan, the above analysis can identify the gaps more closely, distinguishing between sectoral policy and macro economic assumptions.

### 3. Organizations for Sectoral Planning

In most countries sectoral plans are formulated in collaboration between the central planning agency and planning divisions of various government ministries or related research institutes. The latter organizations have their own staff for planning who work out their plan on the basis of more detailed administrative projects or plans



provided by the different administrative or technical experts within the same ministry. Usually those experts use different planning techniques which are not standardized, though they are based on the same macro-assumptions given by the central planning agency. This is partly because these administrative experts in various departments are not technically trained and tend to use conventional approaches which are poor in securing consistency among different sectoral targets. The local branches of these department<sup>s</sup> are usually engaged in implementing their sectoral plans, but not participate in formulation of these sectoral plans.

In order to increase efficiency in sectoral planning it is essential to have a re-training program for sectoral planning experts, especially those in planning division in each ministry who organize various estimates given by the above administrative experts. The latter type of experts also need training on planning methods with special reference to interdependence between planning and implementation, as they feel little responsibility about implementation.

An alternative method for sectoral planning is to utilize private organizations related to various industries. For instance, steel manufacturing association usually has skilled industrial planners who are engaged in a kind of

rolling-forecasting of demand for steel products. Most of the electric power association <sup>in many countries</sup> ~~is~~ <sup>are</sup> also engaged in both short- and long-term projections, and has collaborated with the government in this field. In view of technical nature for sectoral planning, participation of these private experts do contribute to the planning by the government. There is, however, some danger that such private participation may involve private interests of those industries, thus affecting neutrality in favor of their industries.

Another alternative for sectoral planning is to use private research organizations on a contract basis. In this case a wide range of industries is covered by these organizations and the cost for such research and projection might be lower than that directly taken by the government. From the point of view for continuation of planning in rolling-system, this research organization should also take the responsibility of following up the plan compared with actual implementation. This follow-up research, however, does not seem to be suited to the private organizations, since they are usually more projection-oriented and less prepared for such ex ante studies which require much information on government administration.

In summing up, sectoral planning seems to be most suited to the planning divisions of various government

ministries because of their closer link to the central planning agency and advantage in following up their plans in a continuous way. However, it does not necessarily preclude the possibility of inviting private experts in their personal capacities to the government plans or making contract research with the private organizations with respect to certain limited areas of sectoral planning.

#### 4. Organization for Regional Planning

While sectoral planning is considered as an essential part of medium- or long-term planning, regional planning is sometimes undertaken independently from the central planning. Though it is obvious that both central and regional plans are integrated or prepared as much consistently as possible, this independence is partly due to its nature as the plan on certain project areas. In other words, regional projects often relate to specific areas, and they have their own gestation period which does not correspond to the central planning period.

Comprehensive regional plan, or multi-regional plan, on the other hand, is more aggregative and correspond exactly to the central planning period. Such a plan is considered as a regional version of the central plan and is usually formulated by the central planning agency itself in collaboration with local governments.

The types of organization for regional planning

correspond to the above two types of planning: a) project-type planning and b) comprehensive planning.

In countries where project-type planning prevails as in Japan and France, there is an independent ministry for regional planning which is more or less separate from the central planning agency. DATAR in France once shared the same minister with CGP and Regional Planning Agency in Japan is a sister ministry with EPA (Economic Planning Agency), but has a different minister. The share of the economists generally declines in regional planning agency, whereas that of physical planners increases. This is because such an agency is more concerned with social-overhead and demographic aspects of development than with economic activities.

In case of comprehensive regional planning, there is an tendency that it is undertaken by the central planning agency itself. Prior to 1973 in Japan the regional plans had been prepared by the Regional Development Division of the EPA. The regional plan covered both comprehensive multi-regional targets as well as key strategic area targets. The independence of the RPA from the EPA implied that more dynamic policy for project-type planning was to be undertaken. As for the medium-term plan a close collaboration between the two is now being observed in terms of macro-variables.

Usually the function of regional planning agency is to provide guidelines for development and to coordinate various detailed project plans of local governments. There is a planning unit in almost each local government and the unit formulates medium- or long-term development plan including key projects on the basis of regional plan made by the regional planning agency.

In order that the plan be effective, the planners in local government should be well qualified and closer exchange of information with the central government is essential.

As noted earlier, the link in regional plan between planning and implementation tends to be weaker than in the case of national planning because of difficulties in data and identification of the effects of policy instruments. Every efforts should be made, however, to raise planning capability of the local government, to strengthen the function of its planning units and to build up statistical information on regional levels with a view to raise their analytical levels suited to the rolling-plan system in the central government.

## VI. Concluding Remarks

As mentioned in Chapter I, the present paper has focused more attention on a problem of the relationship between plan formulation and its implementation than other U.N. papers on implementations. We emphasized the need to use a set of planning models and to adopt a rolling-plan system based on it so as to have a closer link between planning and implementation at different levels, with special emphasis on medium-term plan and annual implementation.

With respect to the administrative arrangements for this system, we can summarize our suggestions as below.

First, in order that the plan and its targets can be fully analyzed in the course of implementation, it is desirable that the central plan organization has an independent research institute for planning. The function of the institute is not only to analyze development strategies and to develop various planning models but also to prepare comprehensive national economic accounts for planning models in close collaboration with research units of various ministries and local government, universities and other research institutes for sectoral planning.

Secondly, in view of an essential importance of information the government activities for basic statistics

should be more encouraged and strengthened in terms of staff, assisting personels, and financial resources. In view of losses in allocated resources for lack of information, a shift of more resources toward statistical activities will produce greater benefits to the nation's welfare.

Thirdly, training and education for planning staff and top decision-makers need to be more strengthened under new programs with special emphasis on those concerned with fiscal and monetary policies.

Fourthly, personnel administration of these planning experts need to be organized in such way that they are trained jointly and interchanged between the central planning organization, research institute for planning, fiscal division of ministry of finance, related unit of the central bank, other planning units of various ministries and local governments, etc.

Lastly, the program budget system should be more promoted in view of the importance for integrating medium-term investment plan and annual capital budget. The system also helps strengthen the rolling-plan system at large.

## References

- [1] S. Shishido and A. Oshizaka: Japanese Econometric Planning Models (H. & U. E. Simonis (eds.): Japan -- Economic and Social Studies in Development. Otto Harrassowitz, Wiesbaden. 1974)
- [2] S. Shishido and S. Hoshino: Economic Planning Techniques in Japan -- Paper Presented to the Committee on Economic Planning (mimeo.) (1974)
- [3] United Nations: Administrative Aspects of Planning (New York, 1969)
- [4] do.: Appraising Administrative Capability for Development (New York, 1969)
- [5] do.: Public Administration in the Second United Nations Development Decade -- Report of the Second Meeting of Experts (New York, 1971)
- [6] do. E/5640: Third Meeting of Experts on the United Nations Programme in Public Administration -- Report of Secretary-General (New York, April, 1975)
- [7] T. Watanabe: National Planning and Economic Growth (B. Hickman, ed. Quantitative Planning of Economic Policy. Brookings Institution, 1965)



## APPENDIX

### Curriculum for Development Planning with Special Reference to Policy and Management Science in University of Tsukuba

The University of Tsukuba is now planning to open a professional graduate school for planning with special reference to policy science and modern management techniques. The purpose of the school is to educate for master's degree government and business experts together with college graduates having bachelor's degree with a view to provide policy-oriented and multidisciplinary approach in social sciences. The graduate school is expected to receive about fifty students in each year and it is the first attempt in Japan in this new field of social engineering approach.

The graduates are expected to be (a) development planners in the central and local governments and public corporations, (b) business planners in private companies, and (c) analysts in research institutes or "think tanks".

As indicated below, the first year courses are devoted to basic theories and the second year courses to applied fields.

#### A. The first year courses

Basic Model Analysis\*

Statistical Analysis

Micro-Economics

Macro-Economics

Organizational Behavior Analysis<sup>\*\*</sup>

Social Psychology

Political Analysis

Demand Analysis

Mathematical Programming<sup>\*</sup>

Simulation<sup>\*</sup>

Workshop for Quantitative Analysis

B. The second year courses

(Public Sector)

Policy Analysis

Socio-Economic Planning

Optimum Economic Growth

Urban Development Planning

Environmental Planning<sup>\*\*</sup>

Transport Planning<sup>\*\*</sup>

Resource Planning

Energy Planning

Science Policy and Technology Assessment

Education and Man-Power Planning

Medical and Social Welfare Planning

International Political Analysis<sup>†\*</sup>

International Economic Policy

Development Economics and Policy

(Private Sector)

Management Information Systems

Managerial Economics

Econometric Forecasting

Social Survey Analysis

Business Environment Analysis

International Corporation Analysis\*\*

Note: \* means course with a seminar (4.5 unit).

\*\* means course to be added after 1977.

Each course is equivalent to three units and the first year courses are required for 18 units, excluding workshop of three units, while the second year courses are required for 15 units and a graduate thesis.