

**SHOULD TURKEY HAVE A NATIONAL SCIENCE  
POLICY  
FOR THE LONG TERM?  
(A POLICY APPROACH)**

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**Audience :**

The audience in the question of whether or not Turkey should have a national science policy for the long term are the decision makers in the Turkey policy making process (executive body representatives, legislative body representatives), scientists, administrators, industrialists, and the financial community representatives.

**The Actors :**

The actors in the question of whether or not Turkey should have a national science policy for the long term are the decision makers in Turkey policy making process. These decision makers are the President, Prime Minister, Ministers, and the Turkish National Assembly.

**Background :**

Even if the neutrality of science has been discussed, it is possible to say that science has been a world constitution and accepted source of legal power. There has not been anything accepted as much as science. Because it is the only infinite resources, and there is not any problem for sharing it.

As similar to science, technology is any method or knowledge converting limited economic resources into unlimited public resources, and it can be seen in two forms:

- new combination of inputs at the production process;
- new products.

Also, it can be said that any social model which does not include technology does not have the ability to explain socio-economic or socio-political

changes in a society, or any social model which is not suitable to adapt or to deal with technical changes, loses its ability to deal with social phenomena.

For example, as parallel to the above conclusion, technological improvements have been shown as the reason for the failure of the Marxist model.

*"Marx's formal model is not suitable to adapt or to deal with technical changes and accumulation without technical change can never occur" (Robinson, 1979).*

In addition, technology has been seen as the savior of capitalism as similar to Schumpeterian conclusions done fifty years ago. As we remember, they were:

- new methods of production (the mechanized factory, the electrified factory, chemical synthesis, etc.);
- new commodities (such as railway service, motorcars, electrical appliances, etc.);
- new forms of organization (Schumpeter, 1961).

Basically, after 1950 science and technology have been so improved that they have started to be used as the basic tools at the process of decision making, especially for the allocation of resources between sectors, and to drive economic growth (Nelkin, 1977).

Naturally, using science and technology for the national socio-politics and socio-economic purposes has brought the problem of neutrality of science. However, it is said that there is no reason to worry about the neutrality of science because the entry of scientists and technologists into the political area has started to change the character of politics for the better. Also, scientists are, because of their special knowledge, well equipped for an early awareness of the danger and promises arising from scientific discoveries (Lakoff, 1977).

In Turkey, even though the socio-political environment is in need of scientific support, scientists have hesitated to join in the policy making process because of the idea of the neutrality of science. But lately, economic, social, and political situations have been forcing scientists to change their traditional attitude. Because the step of development has been already taken by Turkey, the economic situation is now able to deal with economic growth instead of economic development. In other words, the economy has already started to have problems with the demand side instead of supply.

Also, these new economic situations require Turkey to give attention to the Schumpeterian type of efficiency, focusing on technological improvements and new products, besides the Ricardian one. In other words, there is a need for a policy to use science and technology as the engine of the economy to deal with the problem of economic growth by encouraging certain industries and improving new technological methods and products.

Considering the above points, it is quite possible to say that Turkey should have a national science policy for the long term.

## **Goal and Objectives :**

Goal: to bring together national decision makers into a consensus or into the issue of the science policy.

Objectives: 1) recommending policies that would satisfy the interest groups; 2) to emphasize the importance of having a national science policy; and 3) to propose the best and the most feasible alternative.

## **Assumptions :**

There are two certain assumptions are used in this study. First, Turkey has already taken the step of development. Second, besides internal factors, new international economic and social improvements enter in Turkish socio-economic and socio-political systems as inputs.

## **Alternatives :**

There are at least three alternatives which our decision makers can choose from. These alternatives are ordered from the most passive one to most active one. They are:

1) Continue present situation: This alternative presumes that even Turkey is in the need of a new science policy. He does not have to take any immediate action because the future is uncertain. Also, it assumes that there are both scientific and political uncertainty, they don't provide a clear policy prescription, and laissez-faire is the best forever.

2) Bringing scientists to the policy making process: This alternative presumes that present scientific institutions are good enough to have national science policy, and the problem is bringing scientists.

3) Establishing new scientific institutions depending on government: This alternative assumes that present scientific institutions are not good enough to have a national science policy, and it is the best way to create new scientific institutions by government financial support. Also, this way will bring the scientist close to the political environment.

## **Evaluation of the Alternatives :**

Selection criteria: The selection of the criteria to be recommended for implementation should be based on the evaluation alternatives to see their feasibility and future consequences. The most suitable criteria for this study are:

1) Economic criteria: The best alternative should be the one that satisfies the objective and to enable Turkey to have a national science policy. In other words, it is useless to recommend a plan that is not economically feasible.

2) Political criteria: The selected alternative should be the one that is most likely to be accepted by the politicians, scientists, administrators and the other interest groups. In other words, the selected alternative should satisfy all interest groups.

3) Technical criteria: The best alternative should be the one that is technically the most feasible to be implemented.

### **Alternative Evaluation:**

Based on the economic, political, and technical criteria, an evaluation of the alternatives is undertaken. The method in the evaluation is the ranking method. According to each criterium, each alternative is given a numerical value (from 1 to 3), and the alternatives will be ranked according to their total numerical value. The alternative having the biggest numerical value will be ranked as the first (the most desirable).

From the perspective of economic feasibility, even though creating new scientific institutions depending on the government looks more costly for the short term (construction expenses), for the long term this alternative (Alternative III) looks more suitable from the perspective of economic feasibility because Alternative III (establishing new scientific institutions) promises strong science policy as the requirements of Schumpeterian efficiency and economic growth.

It is obvious that both Alternative I (continue present situation) and Alternative II (bring scientists to the policy making process) will not be able to solve the problem of economic growth and Schumpeterian efficiency. Therefore, Alternative III (establish new scientific institutions depending on the government) is given the highest numerical value as the best choice, Alternative I (continue present situation) is given a 1 and Alternative II (bring scientists to the policy making process) is given a 2.

Regarding the technical criteria, it will also be seen from the long term perspective. As we know, science and technology have been created by scientific institutions. Therefore, from the technical feasibility perspective, besides present scientific institutions, new institutions will be able to give required technical and scientific tools to the policymaking process.

Therefore, it is possible to say that Alternative III (establish new scientific institutions) promises more advantages to the policy making process. Accordingly, Alternative III gets the highest number, 3. From this perspective, Alternative II (bring scientists to the process of policy making) is given a 2 and Alternative I (continue the present situation) is given 1.

Regarding the political criteria, this looks for the possibilities of consensus between interest groups, especially scientists, politicians, and administrators. Even though scientific neutrality is still a sensitive point for the scientists, scientists have already started to change their traditional attitudes. It looks like this point will not be a problem in the long term. Also, politicians and administrators

have started to feel the need of scientists and scientific support in the process of decision making.

Therefore, all alternatives (I,II, and III) look like that they are possible for the long term, and it is possible to give the same value to all three of them. From the perspective of political feasibility, all of them are given a 2.

### Ranking the Alternatives

Criteria	Economic Value	Technical Value	Political Value	Total Value
Continue present situation (Alternative I)	1	1	2	4
Bring scientists to the decision making process with present institutions (Alternative II)	1	2	2	5
Establish new scientific institutions depending on government (Alternative III)	3	3	2	7

It can be seen from the table that the highest numerical value is given to Alternative III (establish new scientific institutions depending on government), with the numerical value of 7. The second alternative (bring scientists to the policy making process) gets the numerical value of 5. Alternative I gets the lowest numerical value, 4.

When we rank alternatives according to their given numerical value, Alternative III (establish new scientific institutions depending on the government) is ranked as the first and best choice, Alternative II (bring scientists to the policy making process with the present scientific institutions) is ranked as the second best choice. Therefore, they are ranked as follows:

- 1) Alternative III (best choice);
- 2) Alternative II (second best choice);
- 3) Alternative I (last choice).

However, this evaluation is done according to long term perspective. For the short term, this evaluation cannot be realistic.

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