

**National Policy Dialogue
on Research and Technology for Development
in
Vietnam**

an assessment

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List of Acronyms

CEB	Central Executive Board of the Party
ET	Editorial Team (Task Force)
ICT	Information and Communication Technology
MARD	Ministry of Agriculture and Rural Development
MOSTE	Ministry of Science, Technology and Environment
MOF	Ministry of Finance
MOJ	Ministry of Justice
MOI	Ministry of Industry
MOH	Ministry of Health
MOET	Ministry of Education and Training
MOTRA	Ministry of Transport
MPI	Ministry of Planning and Investment
NISTPASS	National Institute for Science and Technology Policy and Strategy Studies
SC	Steering Committee
VUSTA	Vietnam Union of Science and Technology Associations
WAN	Wide Area Network
WG	Working Group

1. Introduction

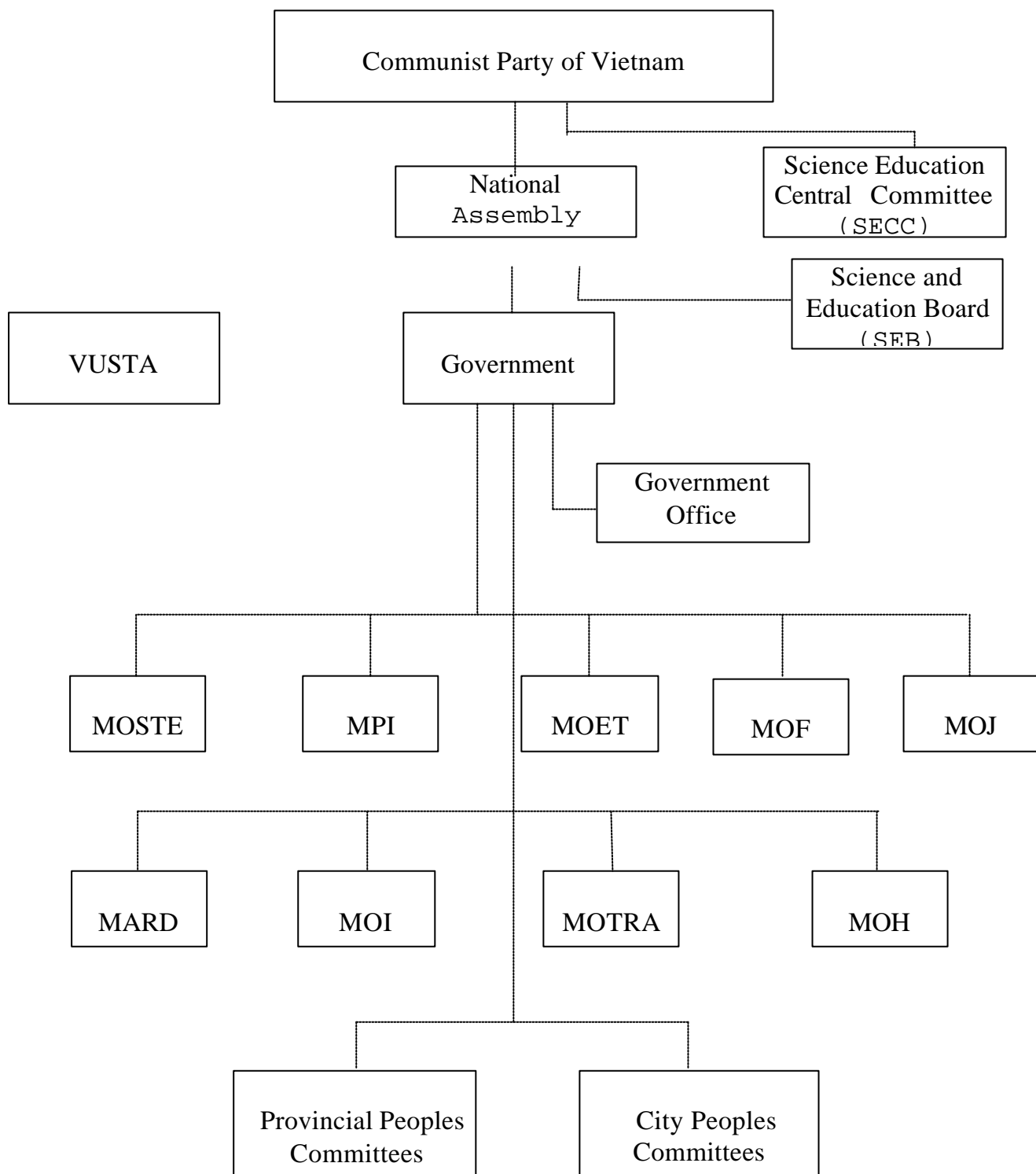
This report has been prepared in the framework of the EU-ACP Policy Dialogue on Research and Technology for Development project. The study on which it reports was performed at the request of the EC/DG-DEV by a team from the National Institute for Science and Technology Policy and Strategy Studies, an institute operating under the aegis of the Ministry of Science, Technology and Environment that has both a policy and scholarly study mandate.

Although Vietnam has been and indeed still is a poor developing country whose economy is based largely on agriculture, science and technology (S&T) has long been considered as a cornerstone of national socio-economic development. As early as in the late 1950s, a national agency for S&T was established to coordinate and promote S&T. During the 1960s and 1970s, even at the height of the American War, a large number of scientists and engineers were educated in socialist countries, and numerous R&D institutes and universities were created by the government, some in sophisticated S&T areas such as deep-temperature technology, theoretical physics, etc.

After the liberation in 1975, Vietnam embarked on an ambitious drive for S&T development in accordance with a Soviet, or science-push, model. S&T was seen as a vital part of a largely self-contained, self-sufficient economic development model. Initiatives were occasionally taken and there was some sporadic lobbying for the establishment of a Science Academy modelled after the Soviet Academy of Science. The number of government R&D institutes and centres mushroomed in the period up to the late 1980s.

Since the adoption of the *doi moi* (renovation) policy in 1986, far-reaching changes have been taking place. The state budget is no longer the only source of funds for R&D, and more and more funds are coming from industry and other sources. The government is no longer the only owner of R&D organisations and universities, and many collective and private R&D organisations are now in operation. After a period in which reform in S&T lagged behind economic reforms, more liberal S&T reforms have taken place in the past couple of years. Following a period in which it was remote from economic activities, S&T is now more closely aligned with the country's industrial interests.

Politically and administratively, Vietnam is a one-party system. The Communist Party of Vietnam (hereinafter referred to as the 'Party') actually runs the country, not only through its policy and strategy, but also through a large number of Party members who dominate the various hierarchies of government, and even non-governmental organisations. Although great reforms have taken place in the economy and tentative moves towards democratisation have been made in the past few years, the political and administrative system is large intact and has remained the same as in the central planning period. The National Assembly has had a more independent and authoritative voice in the past few years, especially in relation to legislation and budget review, although critical issues still have to be decided by the Party. A description of the system is given in the chart below.



The policy and regulatory framework related to RTD may be described as follows.

First, there are Party documents, including the Politbureau's Resolution or Central Executive Board's Resolution, which set the direction, orientation and limitation for the country's development, either in general or in a particular area. For example, after a long period of only state ownership, private R&D institutions may now be founded, providing that their establishment is ratified by a Party document. Normally, a Party Congress is held every five years, and one or two sessions of the CEB may be organised every year to pass a resolution on a particular important issue.

Second, there are National Assembly documents, notably in the form of laws. To some extent, laws also serve a role similar to Party resolutions, in that, unlike a law in a Western country, laws in Vietnam are typically very general, and can usually only be interpreted, implemented and enforced with the aid of implementing regulatory documents issued by the government. Although laws often act to lift barriers, allowing organisations and individuals to do something, they do not say how they can actually do it in a system where governmental permits and licences are required for just about everything.

Third, there are government regulatory documents, notably Governmental Decrees, Decisions and Resolutions. These documents normally make more detailed provisions under certain laws, or provide rights, obligations, incentives, etc. in the framework of government policy. Government documents are meant to be directly and readily implemented. In many instances, however, guiding documents issued by related ministries, mostly in the form of Circulars, are needed in order to actually implement them in practice.

Fourth, there are the government's strategy and long-term planning documents. In the past, this type of document was intended mainly for government agencies and government officials. They are regarded as guidelines for more specific development decisions, e.g. setting priorities in each sector, allocating funds, etc. However, with the emergence of a multi-ownership economy, this type of document is now considered as being open to a wider public.

2. Methods and sources

This report was prepared on the basis of the following methods. First, we undertook a review of written literature on policy dialogue and decision-making processes. This literature includes official rules on legislation and the operation of the government.¹ Second, we reviewed published and unpublished articles on the development of science and technology in Vietnam. Third, the members of the research team reflected on the policy dialogue in which each of them had previously been involved. Fourth, and most importantly, interviews were conducted with people directly or indirectly involved in the RTD policy dialogue and the actual policy-making process. The result of the interviews can be interpreted as case studies of the process of policy dialogue and the policy-making process. The interviews were made on the basis of an open-ended, semi-structured check list, which is reproduced as Annex I.

To provide a comprehensive understanding of policy dialogue in Vietnam, four policy and legislative documents were selected for case studies and interviews:

- 1 among the Party documents, the Resolution of the Second Conference of the Central Executive Board of the 8th Congress of the Vietnam Communist Party on the 'Strategic Orientation of S&T Development during the Industrialisation and Modernisation period and tasks for the period up to the year 2000' passed in December 1996 (hereinafter referred to as 'S&T Resolution');
- 2 as a legislative document, the Law on Science and Technology, passed by the National Assembly in April 2000 (hereinafter referred to as the 'S&T Law');
- 3 as a government strategy document, the Strategy for Development of Science and Technology up to the year 2020 (the 'S&T Strategy');
- 4 as a government regulatory document, Decree No. 119 on 'Some Policies and Incentives to Encourage Enterprises to Invest in S&T Activities' passed by the government on 19 August 1999 (hereinafter referred to as 'S&T Incentives').

Case study reports on these four policy documents which form the empirical basis for this report appear in Annexes IV-VII.

The interviewees may be classified into the following five groups:

- 1 those who direct or supervise policy-making;
- 2 those who directly draft policy documents;
- 3 those who are regularly invited to discussions, from the initial concept to subsequent draft versions;
- 4 those who are beneficiaries of intended policy documents; and
- 5 other social groups, e.g. non-governmental organisations.

Another way of categorising the interviewees is by their background and position. Thus, they were selected from groups of:

- 1 policy-makers and top-level government officials;
- 2 intermediate-level executive officials at government ministries and agencies;
- 3 researchers and S&T workers;
- 4 entrepreneurs and business managers; and

¹ The Act on Procedures of Promulgation of Legislative Documents, passed by the National Assembly on 12 November 1996, and the Act on the Organisation and Operation of the Government, dated 30 September 1992.

5 others, e.g. journalists.

A list of people involved in the RTD policy dialogue and policy-making appears in Annex II.

These two ways of categorising the interviews were used concurrently, so that about 10-12 interviewers were selected for each of the four policy documents studied, with a view to maximising the diverse representation in each policy document, and at the same time minimising the degree of overlap. The final list of interviewees selected is given in Annex III.

The research team consisted of a team leader and four team members, Tran Chi Duc, Hoang Xuan Long, Nguyen Minh Hanh, and Nguyen Minh Nga. All the team members are involved in one way or another in the dialogue on, and the formulation and adoption of a particular policy document. Each team member was responsible for the case study and the interviews in relation to one of the four selected policy documents, although the team leader and other team members sometimes participated in interviews for other documents. This was to ensure that the entire research team had a broad picture of the policy dialogue in related areas, and were able to discuss the report.

The team members also discussed the check list for interviews and the list of interviewees. Based on the terms of reference, a draft check list was drawn up and was subsequently discussed and revised twice before being accepted by the research team.

Before engaging in interviews, the team members were required to read through the policy document under review, study all the related documents that were available, and mull over the policy dialogue in the light of the check list. This was important so as to enable the researcher in question to interact with the interviewees, and guide them into the intended area of discussion.

A case study report was then prepared for each policy document selected. The reports were discussed among the research team, and formed the basis for this country report. The team leader was primarily responsible for preparing the country report. The country report was then discussed by all the members of the team and selected researchers at the NISTPASS, including Tran Ngoc Ca (the head of Technology Policy Department), Vu Cao Dam (the former director) and Le Dinh Tien (the Vice-Director).

3. Vietnam's RTD situation and comments on IDRC report

3.1. Overview of Vietnam's S&T

It is estimated that there are 30,000 people in Vietnam who are involved in various forms of research and experimental development (R&D), including librarians, technicians and other supporting staff. More than 22,000 of these are employed in the national centres for R&D and by ministries and government agencies. The rest are employed mainly by universities and other institutions of tertiary education that perform research. Only a small fraction of the country's R&D scientists and engineers work in industrial enterprises.

According to the IDRC report, the general institutional set-up in Vietnam for research and experimental development (R&D) can be divided into three main components:

- 1 Laboratories and other R&D units within government ministries or under the control of government agencies. There are about 180 such R&D units, located in various parts of the country, although most are in the two metropolitan areas. In Western industrial countries, many of these highly specialised R&D units would be located within industrial or business enterprises. In Vietnam, however, industrial firms rarely build their own facilities for development work. In the command economy formerly practised in Vietnam, the principle was that the government took responsibility for technical change and industrial modernisation, while industry manufactured.
- 2 The university and other higher education departments which perform research as part of their normal activities. Only a limited number of faculties and academic departments at Vietnam's universities and colleges truly have the personnel, equipment, libraries and other resources to perform serious research and undertake experimental development. Among them, the two national universities and the two largest polytechnic universities are the most research-intensive parts of this academic system. Only very slowly, step by step, is a research-based university system in Vietnam in the making.
- 3 The national institutions for research which do not fall directly under an individual government ministry or agency. These are designed to act as national networks of science and technology and operate under the aegis of a government office (i.e. the Office of the Prime Minister). The most significant of these national institutions is the National Centre of Natural Science and Technology, which has a northern and southern branch and also has facilities in some other parts of the country. Originally modelled after an 'academy of sciences', it was restructured in 1993 to become more of a centre for applied research and experimental development. It performs advanced basic research mainly in two areas, i.e. mathematics and theoretical physics. The National Centre for Social Sciences and Humanities has the same basic structure, but only half the number of staff.

These three main components of Vietnam's national R&D structure are expected to have close links with each other. The functional differentiation means that applied research and experimental development are conducted in the ministerial labs, while the universities and colleges are the prime producers of highly specialised human resources for R&D, and the National Centre for Natural Science and Technology bears primary prime responsibility for the most advanced forms of research and for R&D where there is no specific ministry as a customer.

A fiscal crisis is currently affecting the country's R&D institutions. In nominal terms, not in purchasing power parity (PPP), Vietnam's overall R&D budget is estimated to be between USD 50 and 60 million. Since the general wage level for R&D scientists and engineers remains low, while the cost of equipment is becoming as expensive in Vietnam as in the rest of the world, it is difficult to calculate the real value of the overall budget for R&D.

What is clear, however, is that the economic conditions for Vietnamese R&D performance have deteriorated along with the growth of the state's fiscal problems. The lack of appropriate funding and relevant research equipment has forced the R&D institutions - regardless of their main objectives and responsibilities - to move increasingly into contract research, technical services and consultancy arrangements with as wide a range of customers as possible. Secondary jobs (i.e. the holding of several jobs or posts simultaneously) are very common among most categories of staff.

The National Centre for Natural Science and Technology, to use only one illustration, now relies extensively on contract research and consultancy, without which it would probably cease to exist. As a result, the Centre's activities have become much more applied and more closely geared to the demands of industrial firms and other potential customers. The total budget supplied by the central government for the National Centre is less than USD 8 million, while the Centre has a total staff of over 2,000 people. Yet, in comparison with other state-owned R&D facilities, the National Centre has significantly more funds available on a per capita basis for each researcher. It is now the case that scientists at the National Centre, regardless of the stage they have reached in their individual careers, are encouraged to pursue the advanced basic research outside Vietnam, not at the Centre, and, for this purpose, seek fellowships and grants from overseas.

In terms of the scientific and technological infrastructure for economic development, there are a number of areas in which Vietnam does not lack the scientific and technological expertise that is needed for an effective mobilisation of science and scientific results or of specific technological know-how. At present, however, the way in which the national R&D system is organised, financed and managed makes the transfer of relevant information between sectors difficult and expensive.

In addition to the four national high-tech programmes, there are 18 other science and technology programmes of significant size and standing that are funded from the state budget. Eleven of these S&T programmes are oriented towards natural science and technology and are supervised by the Ministry of Science, Technology and Environment (MOSTE). Seven are classified as programmes for the social sciences and humanities and have been placed under the supervision of the Party.

On top of its science and technology programmes, the MOSTE channels funds into smaller-scale S&T programmes and projects at various R&D institutions and at some of the 103 universities and colleges throughout the country. The result, according to government calculations, is that, in 1995 (the last year for which comprehensive statistics were available), 226 separate institutions received grants from state budgets in support of some 9,000 S&T activities being conducted within these institutes. What this means is that the average amount made available to each institution was roughly USD 200,000 and that each S&T activity received in the order of USD 5,000 on average. This indicates the

degree of dispersion of the very modest funding available for encouraging the country's development through S&T. This situation is vividly illustrated, for example, by the College of Social Sciences and Humanities at Vietnam National University in Hanoi (by most accounts the country's leading university), which the central government has allocated a research budget for 1997 of only about VND 500 million (USD 43,000).

One result of this situation is that researchers perceive that there are no well-defined and rational criteria for deciding on the level of resources assigned to institutions at different levels (i.e. national, city/province and enterprise) and to programmes and projects within institutions. Decisions made at central government level on the allocation of funds are seen to be arbitrary, non-transparent, cumbersome, rigid and bureaucratic. The budgetary process is viewed as interfering with the proper conduct of research activities, for it does not consider the time horizons inherent to research projects, the minimum critical mass of resources required, and the priorities set by the research institutes. Some institutions report they have practically no freedom to decide on the management of programmes and projects, and are not allowed to reassign budget allocations to cater for unforeseen circumstances.

Comment: In general, the IDRC report correctly maps out the S&T system in Vietnam. Only one important comment needs to be made, which is that another component must be added to the three main components of the institutional set-up. This new component consists of quasi-governmental, quasi-private organisations, providing mainly technical services, information gathering, and technological consultancy services. This type of organisation has been permitted since the early 1990s, under the economic reform policy. Many of these organisations have been founded by scientists and researchers who used to or are still working at government institutes or universities. Although no reliable figures are available, it is estimated that there are over 500 of such organisations, often called 'centres'. Many of them have been established and operate under the aegis of the VUSTA, which incorporates several dozen specialist S&T associations (e.g. metallurgy, civil engineering, etc.). These organisations are making a significant contribution to the commercialisation of research and technology transfer.

3.2. The acquisition and assimilation of technology

According to the IDRC report, the following are characteristic of the acquisition and assimilation of technology:

- 1 In many cases, research is concentrated on policy instruments for technology push. Inadequate attention appears to have been given to the expected evolution in the demand for technology emanating from the rapidly changing national, regional and international markets. For example, the four focus areas of information technology, bio-technology, new materials and automation would appear to be based on general trends elsewhere rather than on in-depth analyses of the current economic structure in Vietnam and of markets.
- 2 Significant efforts have been made to *adapt imported technology to local conditions*, and electronic and software firms constantly perform adaptive research activities. For example, one company adapted the technology acquired through a joint-venture agreement in order to manufacture refrigerators in accordance with Vietnamese conditions and consumer preferences (i.e. variable power supply, noise level, automatic defrosting, speed of ice-making, separate compartments for different types

of food). These activities are performed by in-house research teams, mostly financed by the private sector.

- 3 *There is a quite widespread perception among both policy-makers and Vietnamese businesses that industrial enterprises wholly owned by foreign corporations do not engage in technology transfer to any significant degree.* The perception is that they operate as enclaves, keeping their technology to themselves, at least in the short run. While they engage in a significant amount of training activities for their own personnel, the relatively limited turnover of technical staff does not allow their abilities and technical knowledge to spill over to other industrial firms. Indeed, it has been reported on many occasions that foreign firms and joint-ventures attract highly qualified personnel from SOEs and local private firms, which creates problems because of the shortage of skilled and experienced workers, technicians and engineers. The established pattern which we observed appears to be highly biased towards acquiring technologies on a turnkey basis.
- 4 *Reverse engineering* plays a major role in technology transfer in the metal-working, machinery and industrial electronics sectors.
- 5 *The provision of high-technology services* such as testing, design, calibration and quality control for manufacturing is also another channel for the acquisition of foreign technology.
- 6 *The Vietnamese industrial sector is composed of firms with widely different levels of technology and technological capabilities.* While the bulk of industrial technology appears to be at least two to three decades behind current best practices (as exemplified by the widespread importation of second-hand equipment, machinery and production lines), there are a few relatively advanced technology firms (both foreign and joint ventures) that show that Vietnam can successfully move into high-technology production. The technological heterogeneity of industrial enterprises poses the problem of how to manage technological pluralism so as to increase industrial production, improve productivity and enhance the competitiveness of Vietnamese industry, while at the same time creating spaces where relatively efficient low-technology firms can survive and gradually move up the technology ladder.
- 7 *There are several property rights issues that need to be addressed so as to provide incentives for investments in research, development and the adaptation of foreign technology.* While industrial property right regulations appear to be adequate, there is a perception, widely shared by researchers and businessmen, that the government agencies that are responsible for these rights do not have the powers to really enforce existing regulations.

Comment: Most of the above is based on first-hand observation, and is essentially correct, but already known among S&T circles in Vietnam. There is not sufficient analytical comment, especially on issues where opinions in Vietnam differ. For example, when making the claim that is frequently heard in Vietnam that foreign firms and joint ventures attract highly qualified personnel from SOEs and local private firms, the report does not mention the experience of countries like Singapore or Taiwan, which is that such personnel may subsequently act as vehicles for the transfer of knowledge and technology from MNCs

to local firms, provided that the business environment is conducive to enterprise. Again, while referring to the provision of high-technology services such as testing and design, the report does not place a figure on the value of these services to technology acquisition in Vietnam.

3.3. A Vietnamese system of innovation

The IDRC team's impressions of the Vietnamese system of innovation are as follows:

- 1 Although many of the ingredients of a Vietnamese *system of innovation* are in place, they are not yet functioning properly as a system. There are policy-making bodies concerned with science and technology; there are many research organisations and universities; there are national high-technology initiatives and a variety of incentives for innovation; there are mechanisms for funding science and technology; and there is strong political support for science and technology. But despite the presence of all of these components, the system does not seem to operate as such. As a result, the pace of technical change and innovation is far slower than what is needed and desired. Various explanatory factors are listed below.
- 2 The *linkages* between research institutions and the productive sectors are still relatively weak compared with many other countries. High priority should be assigned to strengthening these linkages.
- 3 *Enterprises* seem to invest very little in the technical capabilities which are needed to assimilate and absorb the technology which they acquire either from abroad or from national sources. Firms in Japan and Korea usually spend as much on assimilating technology as they do on acquiring it in the first place. In Vietnam, very few firms have the capabilities that are needed to assimilate and master the technology. As a consequence, they are unable to introduce the streams of incremental innovations which are so characteristic of their competitors in other countries.
- 4 There seem to be few sources of *venture capital*, the ready availability of which is such a feature of other rapidly industrialising countries. Without access to such risk capital, it is difficult for entrepreneurs to commercially exploit new technological innovations.
- 5 Countries which have modernised and industrialised successfully all have dynamic innovation systems in which knowledge flows are clearly encouraged. The innovation system in Vietnam is more *static*, with only limited flows of knowledge between institutions. This is due in part to the tradition of secrecy which characterises many bureaucracies, and in part to concerns over the protection (or lack of it) of intellectual property.
- 6 A major weakness in the effective functioning of the Vietnamese innovation system is the difficulty of gaining access to knowledge *in good time*. This impedes decision-making, both on policy issues and with regard to sources of the most appropriate technologies. There is a great need for a 'knowledge brokerage' service which puts those who need knowledge in touch on a timely basis with those who have the knowledge. This applies to knowledge in both Vietnam and abroad.

Comment: Again, the IDRC's first-hand observations are correct, but the report is lacking in in-depth analysis. One particular example may be found in the section on venture

capital: while it is clear that venture capital is important for rapidly industrialising countries, it is also important to note that venture capital deals only work in sound, well-functioning legal and financial regimes, which Vietnam will still find difficult to establish for some time to come. Another example relates to the limited flow of knowledge and information: while the two reasons cited are correct, the real problem in most cases is that the knowledge or information owners have a vested interest in retaining their knowledge and typically wish to be paid in return for disclosing it.

3.4. Education, training and human resources for S&T Activities

The education and training system in Vietnam is fairly highly developed, both in terms of the number of institutions, their geographical location, and the average standard of education.

According to the IDRC report, there is a predominance of mono-disciplinary, specialised and vocationally-oriented institutions along the lines of Soviet-model institutions that serve a single line ministry. These were generally viewed as inappropriate for the shift from central planning to the new market-led demand for labour, as having a teaching content which has little bearing on the market, and as producing graduates with skills that are often not in demand.

The higher education system in Vietnam has recently been restructured and two autonomous national universities have been created through the merger of several smaller universities and colleges. The national universities now report directly to the Prime Minister (and not to the Minister of Education). The restructuring operation has not significantly changed either the way in which academic activities are conducted or the financial and administrative practices in these institutions.

The government's hope in establishing the two national institutions was that new synergies would emerge and that private and donor investments would follow. According to one senior government official, however, 'thus far, nothing very positive has happened. The process has been approached mechanically and poorly implemented. We had hoped for the emergence of new programmes and curricula that would push the modernisation of Vietnam, but little of this has happened.'

In term of vocational training, the government's plans envisage significantly increased budget allocations to vocational and technical (VOTECH) training. Such plans clearly tie in with the wider aim of rapid modernisation and industrialisation.

Comment: The IDRC report presents an accurate account of education and training in S&T in Vietnam.

4. Characterisation of the RTD policy dialogue

4.1. Initiation of policy dialogue and policy-making

Policy dialogue is broader than the policy-making process. Policy-making in Vietnam can be understood as starting from the date when the formulation of a particular policy is officially placed on the agenda of the relevant authority, and a particular body is instructed to draft it for submission to the authority that is supposed to adopt it. After promulgation, it means the end of policy-making process.

The dialogue about such policy may start well before the commencement of policy-making, and may continue long after its promulgation. In this sense, policy dialogue encompasses policy-making.

There are typically two ways in which a policy is initiated. One is for a given policy to be placed on the agenda of a policy-making body such that it is difficult to trace any discussion that took place beforehand. The alternative is a situation in which it is possible to trace a long discussion that took place before the policy appeared on the agenda.

Two of our selected cases fall into the first group of policies, namely the S&T Resolution and the Incentive Decree. S&T has long been one of key issues of Party policy. With the adoption of the objectives of industrialisation and modernisation at the 8th Party Congress in 1996, aimed at turning Vietnam into a basically industrialised country by the year 2020, the CEB has an agenda for passing several resolutions which can serve to achieve such an objective, and the S&T Resolution is planned for the second CEB session.

Similarly, the Incentive Decree was initiated by the MOSTE, because the S&T Resolution stated that ‘the level of investment in S&T development must be raised, using a wide variety of sources. There should be a mechanism for encouraging enterprises to use part of their capital for research and development, technical innovation and human resource training, and such capital use should be exempted from tax’. As the main government body in charge of S&T, the MOSTE was therefore expected to prepare a document to guide the implementation of this Party policy statement. There was little discussion before it appeared on the agenda.

The S&T Law and the S&T Strategy fall into the second category, which is characterised by the desirability and need for a policy to be recognised by a high-ranking government official or senior researcher (in the case of the S&T Law) or by a group of people (in the case of the S&T Strategy). In the case of the S&T Law, the idea originated in 1987, when Dr Vu Cao Dam read a short article about the Rumanian law on S&T organisation and activities. He realised that Vietnam also needed an S&T law, precisely at a time when the country was moving from central planning to a more market-oriented economy. In the case of the S&T Strategy, a group of researchers at the MOSTE who had received their post-graduate training in the former Soviet Union published a proposal in the late 1970s for preparing an S&T strategy and forecasts for Vietnam and argued that a government body like the MOSTE should accord it a high priority.

These people then initiated discussions among intermediate-level departments at the MOSTE and related ministries, such as the MPI and the MOF. A number of research projects were proposed and conducted. For example, in the case of the S&T Law, several research projects were conducted between 1987 and 1991, notably a project lasting from

1987 to 1990 on the review and assessment of the regulatory and policy framework for S&T management, and a project starting in 1991 on the formulation of S&T management measures required for the period of transition from a command to a market economy. Such research was instrumental in producing the initial draft of an S&T Law.

In the case of the S&T Strategy, a number of strategy and forecasting reports were produced, and various workshops and seminars were organised, although no official, explicit strategy document was approved. In a sense, such seminars acted as familiarisation tools for top policy-makers. Thus, we see that recognition of the need for a policy may simply stem from information people chance upon in the literature, and that it is subsequently developed through more careful studies.

In summary, there was in all cases a policy dialogue before the formulation of a policy was officially initiated. However, such dialogue may be either a formal process or implicit in a broader policy context.

The formulation of a policy-making process is often marked by decisions taken by a range of authorities. With a relatively comprehensive policy like the S&T Law, the MOSTE initiated the process by making a formal request to the government, which then asked the MOSTE to undertake more detailed studies. Once it was convinced that such a law was indeed needed, the government formally requested the National Assembly to take a formal decision on the formulation of the law.

Such a decision also sets out the work plan and the roles and responsibilities of the ministries and agencies concerned. In the case of the S&T Law, the National Assembly's decision No. 18/NQ, dated 4 February 1993, clearly stated that the MOSTE had been instructed to handle the formulation of an S&T Law. As such, the dialogue to initiate the S&T Law took six years to be adopted into formal policy-making. In the case of other documents, this period may be shorter or may not be made explicit at all.

4.2. Organisation of policy formulation and discussion

The organisation of policy formulation and discussion is highly formalised. The following are required in order for a document to be passed by the government, the CEB or the National Assembly:

- 1 a Steering Committee (SC) consisting of about a dozen ministers or vice-ministers from the relevant ministries and agencies;
- 2 a Working Group (WG) consisting of 18-20 middle-management level officials, experts and researchers from the ministries and agencies concerned; and
- 3 an Editorial Team or Task Force consisting of about 7-10 people, mainly from a key department or research institute under the ministry or agency in charge of coordinating the formulation of policy.

An example of an S&T Law is presented below.

The decision to establish the SC may be taken by different authorities, depending on the body which is responsible for adopting the policy. In the case of the S&T Resolution, the decision was taken by the Party's Politbureau. In most other cases, the decision was taken by the government or the Prime Minister.

The SC consists of about a dozen ministers or vice-ministers from the ministries and agencies concerned, and is headed by a minister from the lead ministry, which acts as the secretariat for the formulation of the policy. In most cases involving RTD policy, the MOSTE is the ministry involved.

For the purpose of actually preparing and drafting the policy document, the MOSTE Minister often establishes a WG. The WG is also a cross-ministerial group, consisting of 18-20 middle-management level officials, experts and researchers from the ministries and agencies concerned, and is headed by a director of a relevant department or organisation within the MOSTE. In the case of the S&T Law, the first head of the WG was Dr Vu Cao Dam, who was then the director of the Institute for Science Management (which later became part of the NISTPASS). We can see a strong continuation of ideas and debate, because Dr Dam was also the person who suggested the idea of an S&T Law for Vietnam. In turn, the head of the WG establishes an ET or TF based largely on his or her own department or institute, and comprised mainly of staff from the organisation in question. The ET's role is to organise and prepare meetings of the SC and WG, collect expert opinions, process and prepare reports for the SC, the WG and related authorities, process the results of workshops and comments on draft versions, and help the WG to prepare new drafts.

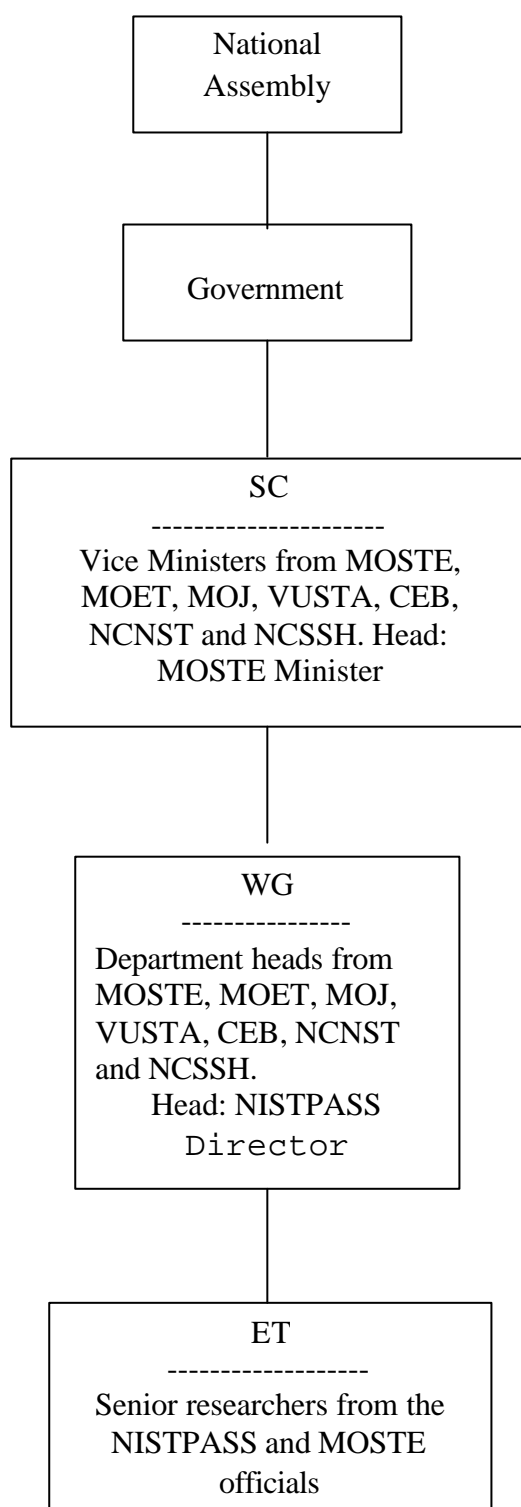
However, such a comprehensive structure applies only to the more important policy documents. In cases of regulatory documents for guiding the implementation of policies or laws already passed by the highest authorities such as the NA or the CEB, a ministry, in this case the MOSTE, can decide itself to start the formulation of a policy. This was the case with the Incentive Decree. In this case, the MOSTE decided to establish a cross-ministerial WG consisting of 12 members, among whom were representatives from the MOF (the SBV Taxation Department). The head of the WG was the Director of the Finance and Accounting Department at the MOSTE, although the ET was comprised largely of staff from the NISTPASS. This was done because it was felt that the formulation of a detailed document such as this Decree needed to be headed by a person with an in-depth understanding of the country's financial mechanism, as well as the practical operation of this mechanism.

4.3. Process of dialogue and policy-making

After the organisation has been completed, policy dialogue and formulation typically comprise the following steps:

- 1 a review and assessment of related policies and regulations;
- 2 the collection and study of relevant materials on similar policies and regulations in other countries, notably selected transitional and developing countries, and more recently neighbouring and newly industrialised countries in Asia;
- 3 a review and analysis of previously published domestic studies and reports;
- 4 the preparation of a detailed outline and a synopsis of the document;
- 5 the actual drafting of policy; and
- 6 the submission of draft versions to issuing bodies for guidance and the submission of the final version for issuance or adoption.

Chart 2: Organisation of the formulation of the S&T Law



This process normally takes between one and three years (in the case of the S&T Resolution and the Incentive Decree), but may take much longer: the S&T Law took seven years to be formulated and passed. Also, a large number of drafts are often made and modified before the final version is officially adopted. For example, the Incentive Decree went through 32 drafts, and the S&T Law went through 28 drafts (and this number would be much higher if minor changes were to be included).

There are several ways of conducting policy dialogue during this process. First, seminars, workshops and round-table conferences are organised to collect opinions, suggestions and comments from people who are thought to be directly or indirectly relevant. In addition to internal meetings and seminars attended by the members of the SG and the WG, the main vehicle for creating dialogue is the organisation of seminars and round-table conferences with people who have not been directly tasked to formulate the document. In the case of the S&T Law, close to 300 seminars and round-table conferences were held. There were over 100 seminars on the S&T Strategy, if seminars conducted by ministries are counted.

There are three types of seminar. One is intended to solicit opinions, suggestions and comments on overall policy issues, and comments on draft versions of a policy document. The second is intended to focus discussion on just a small number of selected topics or issues. In general, the number and backgrounds of the people invited to the second type of seminar is more limited than in the case of the first type. The third type of seminar is a meeting held with the WG and formulators of other policy documents with a view to interacting with them. An example of this third type of seminar is the seminar bringing together the WG for the S&T Strategy with the WG for the Social-Economic Strategy of Vietnam up to the year 2010.

In most cases, seminars and round-table conferences are organised in Hanoi at the offices of the MOSTE or the ministries concerned. However, for some documents, notably the S&T Law, such events were also organised in other cities and provinces. Seminars aimed at eliciting comments on and suggestions for drafts of the S&T Law were organised in a range of different locations: sometimes they were limited to people in one province or one sector, but in many instances they were organised for a wider audience, with delegates coming from many provinces and sectors, and with the aim of sparking a wide-ranging, interactive debate.

The people invited to attend seminars and round-table conferences represent a wide range of social and professional strata. The organisers often try to invite top-level policy-makers and decision-makers, middle managers, as well as grass-roots representatives. In terms of background, the participants are often scientists, engineers, economists, lawyers, etc. Scientists may be further grouped into mechanical engineers, physicists, biologists, agricultural scientists, medical scientists, etc. Another criterion on which invitations are based is the current workplace, which is classified into R&D organisations, universities, business enterprises, administrative bodies, NGOs, etc. In general, these criteria are applied concurrently to arrive at the most representative composition.

However, there are several weaknesses with this system. First, people may be invited either as official representatives of invited organisations or in their individual capacities, although the former is the norm. Consequently, if an organisation sends two different people to two different seminars on the same policy, opinions may differ. Second, private organisations

and individuals are seldom invited. Third, the foreign sector, e.g. foreign offices and foreign companies, are also rarely invited. Fourth, although NGOs regularly receive invitations, they are normally invited at a central rather than a grass-roots level, and NGO representatives normally come from S&T associations rather than from other sectors.

The second means of encouraging policy dialogue is by sending draft policy documents to a wider circle of people for critical comments. For example, the draft S&T Law was sent to over 500 people. The principle of selecting suitable recipients is similar to that applied to invitations to seminars. However, more attention is paid to people and organisations that are not in Hanoi, Ho Chi Minh city, and, for that matter, difficult to access. The objective here is to ensure that the views of a broader community are solicited.

The third vehicle of policy dialogue involves commissioning position papers on particular topics related to a policy in the making. For example, the S&T Strategy project office commissioned over a dozen such position papers.² The authors of such papers are usually prominent researchers and scholars. These papers are then circulated, mainly to the members of the SC, the WG and the ET, but also to other people selected by the WG or the ET.

The fourth vehicle is the discussion of first drafts and drafts close to the final one with departments and institutes within the MOSTE. This is particularly important for the MOSTE as the ministry in charge, because it wants to have a sensible, credible draft to send out for comment, especially before sending the official draft to other ministries as mentioned in the following paragraph.

The fifth vehicle of dialogue involves the SC, the WG or the MOSTE sending draft policy documents to the relevant ministries and government bodies for official comment. For example, the first draft of the Incentive Decree was sent to 27 government entities, including the MOI, the MOF, the SBV, the MARD, the MOI, and the Economic Committee of the CEB. This is where conflicts and differences in opinions are most difficult to resolve, because each ministry has its own turf and vested interest, and is therefore keen on defending its own stance.³

This is not to mention the differences in some of the underlying stances. For example, the S&T community and S&T policy-makers, especially those at the MOSTE, traditionally tended to assume that state capital investment in S&T would be good for the country and would be productive. Until recently, there were only a few officials at the MPI and the MOF who were ready to question this, and who requested the MOSTE to provide evidence for the assumed return on investments in R&D activities.

4.4. Evaluation of policy dialogue as an open learning process

² Examples include Nguyen Trung, *Views on comparative advantages of Vietnam industrialisation and modernisation strategy*, and Nguyen Quang Thai, *Identification of the starting point of the Vietnamese economy*.

³ The National Assembly is a very new legislative body in Vietnam. Most legislation is still initiated and prepared by the relevant ministry, which later issues an implementing guide. With the heritage of a command economy, ministries may still want policies or regulations that are best for them, but not necessarily for their intended beneficiaries.

4.4.1. Open

The policy dialogue in Vietnam has become much more open during the past ten years. In terms of the number and variety of actors involved, we can see that a large number of people from a broad range of social and professional strata were involved in the four selected cases, although some segments, such as the private sector, NGOs, etc., were underrepresented.

There are many mechanisms and procedures for inviting influence from outside the drafting and decision-making circles. End-users and beneficiaries are tending to have an increasing say in policy formulation. However, this influence is limited in that it springs mainly from people and organisations whose views have been explicitly solicited. There have been few opportunities for a wider public and those who are not directly accessible by the drafting team to find about the policy drafts, and to express ideas and comments on them.⁴

The mass media in general, as well as press and information agencies, have not paid attention to the S&T policy dialogue, and seldom act as carriers or channels for debate. The only exception has been in relation to the S&T Law, the draft of which had to be discussed in the National Assembly before a vote was taken on its issuance, and which therefore received some media attention.

Of particular note is the flexibility in the policy dialogue. In relation to all four selected documents, policy goals and priorities were often not fixed at the outset, but were amenable to revision and even radical change. In the case of S&T, the initial suggestion made by the MOSTE and the WG was to classify the R&D organisations according to a set of fixed criteria, and hence on the basis of a rigid, hierarchical framework, with a 'central institute' that is guaranteed full State funding, a 'ministerial institute' that is guaranteed funding up to 50% of its budgetary needs, and a 'local institute' which basically has to find funding from industry in the form of contracts. This sounds very much like the ghost of the central planning era. However, after a heated debate, and in particular after the research and business communities had expressed their views on the matter, this suggestion was more or less abandoned. The S&T Law instead stipulates a tendering system, in which R&D institutes have to compete for funding regardless of whether they are 'central' or 'local'.

In the case of the S&T Strategy, only four national priority areas were stated in the beginning, namely information technology, biotechnology, new materials and automation. During the first year of dialogue, many critical comments were made about these four areas, which were said to be either not appropriate or not sufficient for Vietnam. It was then suggested that other priorities should be added to these four areas, reflecting a worldwide trend which Vietnam could not afford to miss. This resulted in the advent of two new priority areas, namely mechanical engineering and food processing.⁵

⁴ So far, only a small number of documents which are likely to have an impact on the whole nation or on the lives of all Vietnamese citizens, e.g. the Party's draft Political Report and the draft Civil Code, have been published in *Nhan Dan*, Vietnam's leading newspaper, for comments and suggestions from the general public.

⁵ It may be safe to say that the prioritisation of mechanical engineering is a legacy of the Soviet-style industrialisation strategy reinforced by the South Korean model which many Vietnamese wish to emulate,

In the case of the S&T Resolution, it was initially argued that the undeveloped socio-economic system was the main reason for the weaknesses in the development of S&T. It was later claimed that S&T policy and management had been slow to reform, lagging behind economic reforms, and that the main improvement would therefore be to embark on a more drastic S&T reform.

In the case of the Incentives Decree, tax exemption was initially only envisaged for scientific research and domestic enterprises, but was later extended to technical development and S&T services, and to foreign enterprises. This reflects the conventional attitude during the initial stages, i.e. a preoccupation with science, which is followed by a realisation that it is the application of R&D results on which a developing economy depends.

4.4.2. Learning

In general, the policy dialogue needs to record the arguments, decisions and results of the policy-making process. The opinions and views of the MOSTE, the relevant ministries and the government are normally prepared and communicated in written form. People attending seminars are also requested to submit written papers, if necessary after the event.

ET members often act as rapporteurs for a seminar. They take notes and a simplified form of minutes. However, not much attention is paid to these. Notes and minutes of meetings are usually circulated for SC, WG and ET participants in subsequent rounds of discussions. Some of their contents are taken into account and used to redraft earlier versions. However, in many cases they are not discussed, which means that opportunities are missed to learn from previous discussions and to transfer their implications to subsequent discussions, and that the accumulated learning effect is limited.

We also gained the impression that ‘brainstorming’ or interactive debate did not really take place. Very often, there was only enough time for each participant in a seminar to speak for 20-30 minutes on a particular issue, after which someone else would speak for the same length on another issue. There was also a tendency for a person from one field or a profession to speak mainly about his or her own area. Many seminars, papers and reports were lacking in arguments and evidence for the views expressed in them, which also meant that little learning occurred.

There is even less opportunity for making the arguments, decisions and results of policy dialogue publicly available. Very few aspects of the dialogue on the four selected policies were ever published. Moreover, the rare articles that are published usually appear in professional journals, which are not widely read.⁶

Access to unpublished materials relating to such policy dialogue is restricted. Anyone who is not directly invited to take part in a dialogue on a particular policy will find it hard to gain access to records. This applies even to government officials who are not on the lists used by the SC, the WG and the ET.

while food processing is influenced by a good mixture of actors, including UNDP and the WB, as well as local grass-root communities.

⁶ Examples are the *Scientific Activity Review* published by the MOSTE, and the *Science and Development* newspapers also published by the MOSTE.

4.4.3. Process

Whilst policy dialogue as a process is certainly a new concept and practice in Vietnam, the country has already travelled a long way on this road.

Of the four policies selected, the S&T Strategy is the most noteworthy example of a situation in which the focus was not placed exclusively on the results of the policy dialogue, but in which attention was also paid to the process of reaching decisions on the S&T strategy. For example, a lot of time was spent not only by the SC and the WG, but also by representatives of other ministries and organisations, in discussing the procedures for strategy-making, such as how to solicit and collect opinions from ministries and provinces (i.e. whether to prepare a national strategy first and then ask ministries and provinces to address specific issues, or let them prepare their own strategies first, and then synthesise them into a coherent national strategy).

Other questions which were heatedly debated include how to coordinate the formulation of S&T Strategy with the formulation of the Socio-Economic Strategy, how to orchestrate the work of the SC and the WG with the MOSTE, etc. It is worth noting that, initially, few people in the SC and the WG believed that the results of their dialogue would be an explicit S&T Strategy document. Rather, they assumed that the results would be used as inputs for other policy dialogue and formulation.⁷ The discussion process was more flexible and abundant than expected. The discussions often depended more on the issues to be addressed rather than on matters of formality. There were unexpected debates on whether mechanical manufacturing and post-harvest technology should be included in the national development priorities, and what specific key technological fields were needed for socio-economic development. Certain discussions were also unexpectedly prolonged, such as on the connection between the road map of technology development and the science and technology development strategy, or on the role that action plans should play in the strategy.

To some extent, the same can be said of the S&T Law. During the seminars, procedures and formalities were changed to accommodate the topic. To facilitate the dialogue, the WG and the ET also prepared a brief paper on outstanding issues and issues on which a consensus had not yet been achieved, suggesting potential solutions. This was then sent to the participants in the run-up to a seminar. Among the critical issues that were largely resolved through this type of debate were the funding of the R&D system and the remit of S&T foundations (both public and private).

The process of dialogue on the two other policies was focused more on results, and was not concerned so much with the process by which decisions are reached. This is due in part to the nature of the S&R Resolution as a Party document (which must therefore follow Party principles), and in part to the perception that broad participation is not really necessary in order to formulate a policy on a highly specific issue.

In general, there has been a fairly high degree of tolerance of failure. One case in point is the recognition of the failure of the S&T policy and management mechanism, which did

⁷ This holds true at the time of this study. The government recently stated that the S&T Strategy drafts will be used mainly as inputs for the formulation of the Political Report for the 9th Party Congress, which is to be held in the spring of 2001. It is not yet clear whether an explicit S&T Strategy document will be adopted.

not match up to the more sweeping economic reforms. This led to discussions on and the acceptance of more radical policy measures than had been envisaged at the outset. Another example concerns the Incentives Decree: under Vietnamese law, an act of law prevails over all other legal instruments, which means that a decree (as a document of lesser authority) cannot contain any provisions that are in conflict with a law. In this case, the Tax Law already stipulates that only scientific research is eligible for tax exemption. Most of those participating in the dialogue were of the opinion that technical development should also be tax-exempt. However, incorporating such a provision would have meant contravening the Tax Law. The issue had to be put before the Prime Minister, and it was finally decided that technical development should also be exempt from tax.

The procedures of dialogue are fairly flexible. It is fairly easy to adapt the items on the agenda, the formality of discussions, etc. in accordance with suggestions made by the participants.

The policy dialogue process is not very transparent, however. Although there was sufficient transparency among those who were directly involved in the process and/or who were asked to contribute to the formulation of policy, the general public and other professionals had no clear idea of what was going on, and of why and how a policy is shaped in the way it is.

5. Assessment of influence exerted by RTD policy dialogue

5.1. Strengths of the policy dialogue

The policy dialogue in Vietnam has deep historical roots in the system of central planning. As a direct result, the policy landscapes are based on highly organised and formally structured mechanisms that are embedded in elaborated policy-making processes. Some notable strengths of this process are as follows:

- 1 a focus on building *wide support* among stakeholders through seminars and round-table conferences;
- 2 a collective *consensus*, built through cross-ministerial discussion exercises;
- 3 a clear *responsibility* (i.e. a specific government agency is made responsible) for coordinating the policy dialogue and policy-making;
- 4 room for *feed-back* in the dialogue process, and between policy dialogue and policy-making;
- 5 opportunities to *translate issues* into a policy agenda.

5.2 Effective influences

Discussions on policy in general have had an impact on drafting and improving S&T policy. The following are examples of notable impacts:

- 1 adjusting initial *subjective intentions* of Party leaders, specifying and adjusting plans on measures and policies; and
- 2 showing *community spirit* through the participation of different groups in discussing and shaping policy. This has helped to facilitate the subsequent process of dissemination and implementation;
- 3 contributing to the development and introduction of *new policy-making methods* which are better suited to the period of economic reform;
- 4 enhancing the *content of policy* by adding new ideas and structures;
- 5 *expanding the narrow concern* with only high technologies adopted elsewhere, and focusing more on areas that are appropriate to Vietnam, e.g. by adding mechanical engineering and process technology for agricultural products to the key S&T priority fields for socio-economic development. Moreover, it also helped to clarify specific features of priority technologies, rather than simply indicate a general direction;
- 6 enhancing the *feasibility* of the contents adopted in the policy document.

For instance, in the S&T Resolution, although the focus at the outset was on ‘setting out strategic orientations on science and technology up to 2020’, after a long debate, the Resolution was refocused mainly on ‘short-term missions and measures up to the year 2000’. Issues suggested by the S&T community were included in the final version of the document, such as:

- 1 confirming the role of science and technology as a motive force of the process of national industrialisation and modernisation, and recommending that the State should contribute to the development of science and technology;
- 2 improving resources for science and technology development (i.e. allocating 2% of the State budget, promoting training facilities for science and technology, etc.); and
- 3 undertaking a more radical reform of the mechanism of science and technology management.

The discussions created an atmosphere of trust and democracy, which made it easier to listen to other people's opinions. The organisation of the discussions in a series of rounds encouraged a review and critical reassessment of opinions that had been expressed and decisions that had been taken at an earlier stage.

In the course of discussions, a number of arguments emerged about supposedly straightforward problems such as how to properly understand the goal of turning Vietnam into an industrialised country by the year 2020, and whether the four prioritised fields of science and technology fields are sufficient. Such arguments have given rise to follow-up discussions to eliminate the conceptual impasses. These were unlike the initial discussions, which were conducted purely in order to generate comments on a particular issue.

5.3. Weaknesses and limitations

- 1 In a number of instances, out-of-date concepts and theories of development were taken for granted. For example, there was no discussion of the meaning of industrialisation and modernisation in Vietnam, or of the implications of the combination of socialism and a market economy for S&T policy. These disadvantages partly reduced the scientific and radical slant in the discussions.
- 2 The process may last too long, and reduce the timeliness of a policy measure.
- 3 There is a lack of opportunities for unsolicited opinions and debate, especially for professionals.
- 4 A general weakness was the lack of follow-up activities and timely adjustment of policies after the policy in question had been issued. At present, there is no formal mechanism for collecting opinions on the appropriateness or inappropriateness of the policies adopted on an extensive basis. For example, the implementation of the S&T Resolution was evaluated only by the Party and the State's bodies in accordance with administrative procedures. As another example, a 'Report on the Party's Leadership in Science, Technology and Environment over 15 Years of Reforms' was prepared by the NISTPASS following an unexpected request from the MOSTE in February 2000. Although this report is the result of a NISTPASS study, the MOSTE is not planning to commission such studies on a regular basis in accordance with scientific procedures).
- 5 Policy issues were sometimes discussed in a fragmented fashion, resulting in a lack of coherence and consensus. For example, in the drafts of the S&T Strategy, all branches and areas of science and technology were listed in the strategy for science and technology development. It may be said that a unique path for science and technology development in Vietnam has not been mapped out convincingly.

6. The Impact of the IDRC report on the RTD policy dialogue in Vietnam

The IDRC report was widely distributed to several groups of people. First, the draft was sent to about 200 participants in seven topical workshops and one national workshop, who were asked to discuss it. Second, it was sent to members of the SC, the WG and the ET of the S&T Strategy formulation. In addition, it was also distributed in an informal manner to a large number of scientists, managers and policy-makers from various government bodies. The assessment of the IDRC report focuses on the first two groups.

The researchers, executives and businessmen invited to the IDRC workshops were very receptive to both the approach taken by the report and its contents. In terms of the approach, the IDRC team and the report made a considerable impact in fostering an open policy debate. In terms of the contents of the report, the Vietnamese communities agreed on and shared many of the analyses, observations and suggestions included in the IDRC report, notably:

- 1 the six major issues mentioned in the section on the international context;
- 2 the analysis of the current situation regarding S&T systems in Vietnam, such as the ageing of S&T manpower, inappropriate S&T education and training policy, the lack of integration between research and industry, scattered and overlapping R&D systems, etc.
- 3 some of the report's suggestions and recommendations, such as on foundations and funds for research, the formation of a centre of excellence, the merging of the two National Centres for Science and Technology, the need to allocate more investment and resources to traditional sectors, the setting up of a technology management programme, etc.

There were also a number of views that were not shared by the Vietnamese counterparts, for example:

- 1 the view that it will be difficult to move basic research to universities;
- 2 the assessment of the two national universities;
- 3 the view that the four high-tech areas are not suitable for Vietnam.

It was also felt that the IDRC team and report had omitted several issues which were important for S&T strategy making in Vietnam, such as:

specific impacts of globalisation on S&T development in Vietnam;

- 1 a policy on the development of indigenous technology in Vietnam;
- 2 the socialisation of education and training in Vietnam;
- 3 specific management measures geared towards research and technology;
- 4 a new financing mechanism for S&T.

The IDRC report has had a significant impact on circles which are directly involved in the formulation of S&T Strategy. Such impacts are reflected in the approach towards the strategy debate and also in the contents of S&T Strategy drafts.

In terms of approach and methodology, the impact of the IDRC report on the S&T Strategy has been reflected in three major aspects:

- 1 the emphasis on the analysis of international context, particularly opportunities and challenges to strategic choices for S&T development in Vietnam;
- 2 the priority given to a national system of innovation;
- 3 The emphasis on a broader socio-economic policy framework for S&T strategy.

In terms of specific contents, some of the report recommendations which have been mirrored in Vietnam's S&T Strategy drafts are:

- 1 a reassessment of the four national priority S&T programmes and the identification of more specific priorities;
- 2 the establishment of funds and foundations for research and technology;
- 3 the issuance of policies that are conducive to the importation and assimilation of technology;
- 4 better enforcement of intellectual property right protection;
- 5 sending people abroad to follow advanced courses of studies;
- 6 the establishment of an international forum for S&T policy advice;
- 7 measures to encourage enterprises to invest in R&D;
- 8 the allocation of more resources to agricultural and traditional sectors;

In summary, it is safe to say that the IDRC team and report has had a direct significant impact on the S&T Strategy dialogue, and to some extent also some indirect impact on the S&T policy dialogue in general.

7. Recommendations for improving RTD policy dialogue

- 1 The selection of national S&T priorities normally involves the interests of various scientific and technological forces from different fields of science and technology. People usually attach importance to the fields in which they operate. People from different fields should therefore be gathered and involved in interactive and brainstorming discussions, so that they can understand each other better and reach a consensus more easily.
- 2 The discussions with economists and the business community should be given more appropriate attention, so that scientific and technological priorities can be integrated more closely with the country's socio-economic development.
- 3 Instead of merely stating and presenting views and statements, participants in policy dialogue should be encouraged to prepare arguments and analyses. Only then is it possible to constructively discuss and reach a consensus on issues on which there is a conflict of opinions.
- 4 Better means should be used for recording the arguments, opinions and results of policy dialogue, e.g. by feeding selected materials into a public database.
- 5 The arguments, opinions and results of policy dialogue should be made publicly available, for example, by using ICT tools such as government intranets and WANs.
- 6 The private sector should be more actively involved. This applies especially to small and medium-sized enterprises and entities in the informal sector.
- 7 NGOs should be more actively involved, especially those which work at the grass-root level rather than those working at central, national level.
- 8 International agencies and foreign institutions should be involved in a more proactive manner, for example, by asking them to participate in policy discussion meetings and make comments and suggestions on draft documents, rather than only seeking reference material from them.
- 9 The general public should be involved in the policy dialogue. This can be achieved by various means, for example by requiring the WG and the agency in charge of policy formulation to publish articles on policy making in selected professional journals, and in some cases in newspapers, presenting the main ideas and issues and inviting people to send in comments and suggestions; and by disseminating such information through government intranets and WANs.
- 10 A mechanism should be developed for resolving the dilemma by which a wider and more open dialogue will generate a larger body of opinion, thus making it more difficult to achieve a consensus.

APPENDIX I

NAMES AND ADDRESSES ON VIETNAM RTD MAP

Pham Gia Kiem	Deputy Prime Minister
<i>Vu Dinh Cu</i>	<i>Deputy Chairman, National Assembly</i>
Ph ^h m Th ^p Tr ^o n Ch ^o u	Office of the National Assembly
D ^o ng V ^o n Ti ^o n	Office of the Government
H ^a M ^u Du ^o	
Dang Huu	Chairman, Science and Education Board, CEB
H ^a Ng ^a c Lu ^u t	Science and Education Board, CEB
Chu Tuan Nha	Minsiter, MOSTE
L ^a Qu ^y An	Vice Minsiter, MOSTE
Nghi ^a m Minh Ho ^u	MOSTE
L ^o c Di ^o u To ⁿ	MOSTE
Ph ^h m S ^x nh Hu ^u nh	MOSTE
Pham Quang Trung,	Vice-Minister, MPI
Pham Thi Huong	S&T department, MPI
Ho ^u ng M ^h nh D ^o ng	Hanoi city Department of Science, Technology and Environment
Le Quoc Khanh	Vice-Minister, MOI
Nguyen Thien Luan,	Vice-Minister, MARD
Do Trung Ta	Vice-Minister, MOF
V ^o Cao S ^u m	Hanoi National University
Ng ^a L ^e	Scientic Activities Magazine
Nguy ^o n Ch ^o n Gi ^c	Science and Development newspaper

Appendix II

List of interviewees

Phạm Thị Trâm Châu	Office of the National Assembly
Đặng Văn Tiến	Office of the Government
Hà Mùi Du	
Hà Ngọc Lễ	Science and Education Board, CEB
Lê Quý An	MOSTE
Nguyễn Minh Hoàng	MOSTE
Lê Diễm Tô	MOSTE
Phạm Xuân Huân	MOSTE
Hoàng Minh Dũng	Hanoi city Department of Science, Technology and Environment
Nguyễn Minh Hằng	National Center for Social Sciences and Humanities
Mai Huỳnh	National Center for Natural Sciences and Technology
Nguyễn Minh Quân	NISTPASS
Nguyễn Văn Thu	NISTPASS
Nguyễn Hữu Thọ	Institute of Information Technology
Mai Xuân Ngọc	Agriculture University
Nguyễn Hữu Thọ	Trade University
Võ Cao Sơn	Hanoi National University
Quản Ngọc Cường	Tran Phu Mechanical Engineering Co.
Lê Trâm Sơn	Vietnam Electronics Corporation
Huỳnh Minh Tiến	CONCETTI Consulting Co.
Trần Văn Quý	Vietnam Textile Corp.
Hoàng Văn Hạnh	Pharmaceutical Corp.
Nguyễn Tuấn Phong	Petro Vietnam
Nguyễn Mạnh Thi	
Nguyễn Lê	Scientific Activities Magazine
Nguyễn Chấn Giác	Science and Development newspaper

Appendix III Check-list for interviews

General questions:

- 7 When policy dialogue was started? Initiated by whom?
- 7 Dialogue process (form of debate, steps and sequence, procedure etc.)? What are main difference compared to earlier?
- 7 Who/what organizations were involved in policy dialogue?
- 7 Who are beneficiary of policy document? Are they clearly identified in the beginning? Are they changed during the process?
- 7 What are main changes in policy objectives/priorities during dialogue? How are such changes related to national development goals?
- 7 Did policies (and their discussion) pay enough and explicit attention to technology development, demonstration and application? How such policy instruments have impacts on practices of S&T activities?
- 7 Main benefits of policy dialogue (e.g. enhancing feasibility, etc.)

About open

- 7 Is the dialogue process conducive for adjustment of objective/priority set in the beginning? Example?
- 7 What are social groups involved in dialogue?
- 7 Is the dialogue process sufficiently democratic to solicit outside influence?
- 7 How were end-users and private sectors involved in dialogue?

About learning

- 7 Was it possible to explicitly and objectively assess the past failures and mistakes?
- 7 Were conflicting/opposite views (compared to original ideas and/or top leaders) accepted for dialogue?
- 7 Is there mechanism to record and publicly make available argument, decisions?

About process

- 7 Is the dialogue process only concerned with final result (e.g. policy statement), or also with the process to reach decisions?
- 7 Is the dialogue open and transparent?
- 7 Procedure/step for dialogue were fixed from outset, or are flexible and adjustable for each issue?
- 7 Roles of different organizations (UN, donor, foreign academia etc.) in dialogue?
- 7 Is there mechanism for feed-back opinions?
- 7 Is there mechanism for adjustment after implementation?

About the influence of IDRC report

- 7 Do you know the IDRC report? If yes, how do you know?
- 7 What contents/recommendations of IDRC report are relevant/useful for Vietnam? Why?
- 7 What recommendation of IDRC report were discussed? What were accepted for incorporation to policy document?

APPENDIX IV

Case study: Resolution on Science and Technology

Case study: Strategy for science and technology up to the year 2010

Case study: Law on Science and Technology

These case studies will be made available during the meeting of EU Informal Working Group on RTD, in Brussels on 24 November 2000