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GOVERNING NATIONAL INNOVATION SYSTEM

RAMBOLL

THE WORLD BANK

EVIDENCE ON ENABLING GOVERNANCE AND LEGITIMATION: FINDINGS FROM AN ONGOING STUDY*

- "Rigid top-down dominance in the society."
- "Legal frameworks are fractured and non-existent for service agreements."
- "Difficult to commercialize green technology due to energy price regulation."
- "Governance structures prioritize large companies."
- "From the point of view of companies, the policies of governments are found confusing, non-transparent and poorly communicated."
- "Conflicting domestic and international product regulations create barriers to international trade."
- "Institutions have offices in all provinces – bureaucracy is high."
- "Government institutions are mainly involved in government projects that are 'given'."

*Piirainen, Koria et al. "An analysis of drivers for emerging sectoral innovation systems in developing economies: cases Tanzania and Vietnam". Draft of ESIS final report. Helsinki April 2012.

GOVERNANCE OF A NATIONAL INNOVATION SYSTEM (NIS)

- Governance is the process of decision-making and the process by which decisions are implemented (or not implemented).
- Innovation and technical progress are the result of a complex set of relationships among actors producing, distributing and applying various kinds of knowledge.
- These actors are primarily private enterprises, government authorities, universities and public research institutes and the people within them.
- In rural areas, for example, other actors may include producer associations, individual farmers, cooperatives, NGOs, extension services, research institutes, religious leaders, finance institutions, political parties, the military etc.
- The actors are linked together in various ways. The linkages can take the form of joint research, personnel exchanges, cross-patenting, purchase of equipment and a variety of other channels.
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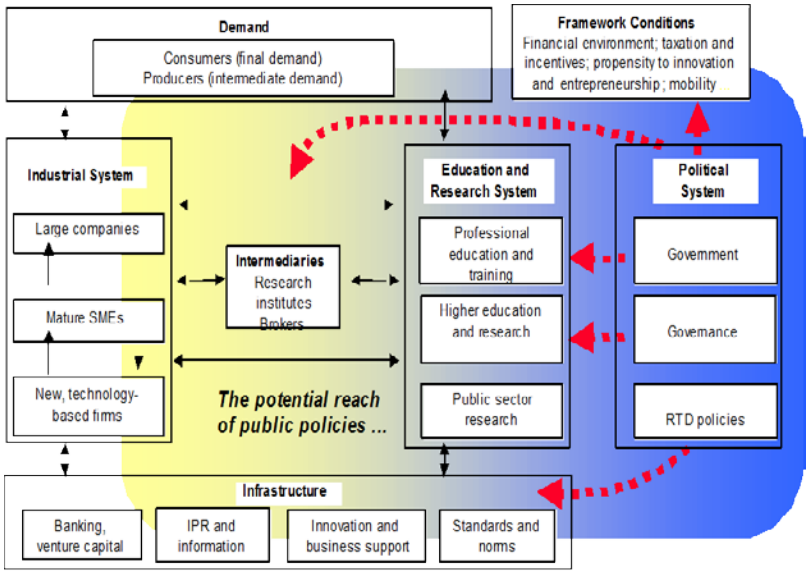
RATIONALE FOR NIS GOVERNANCE

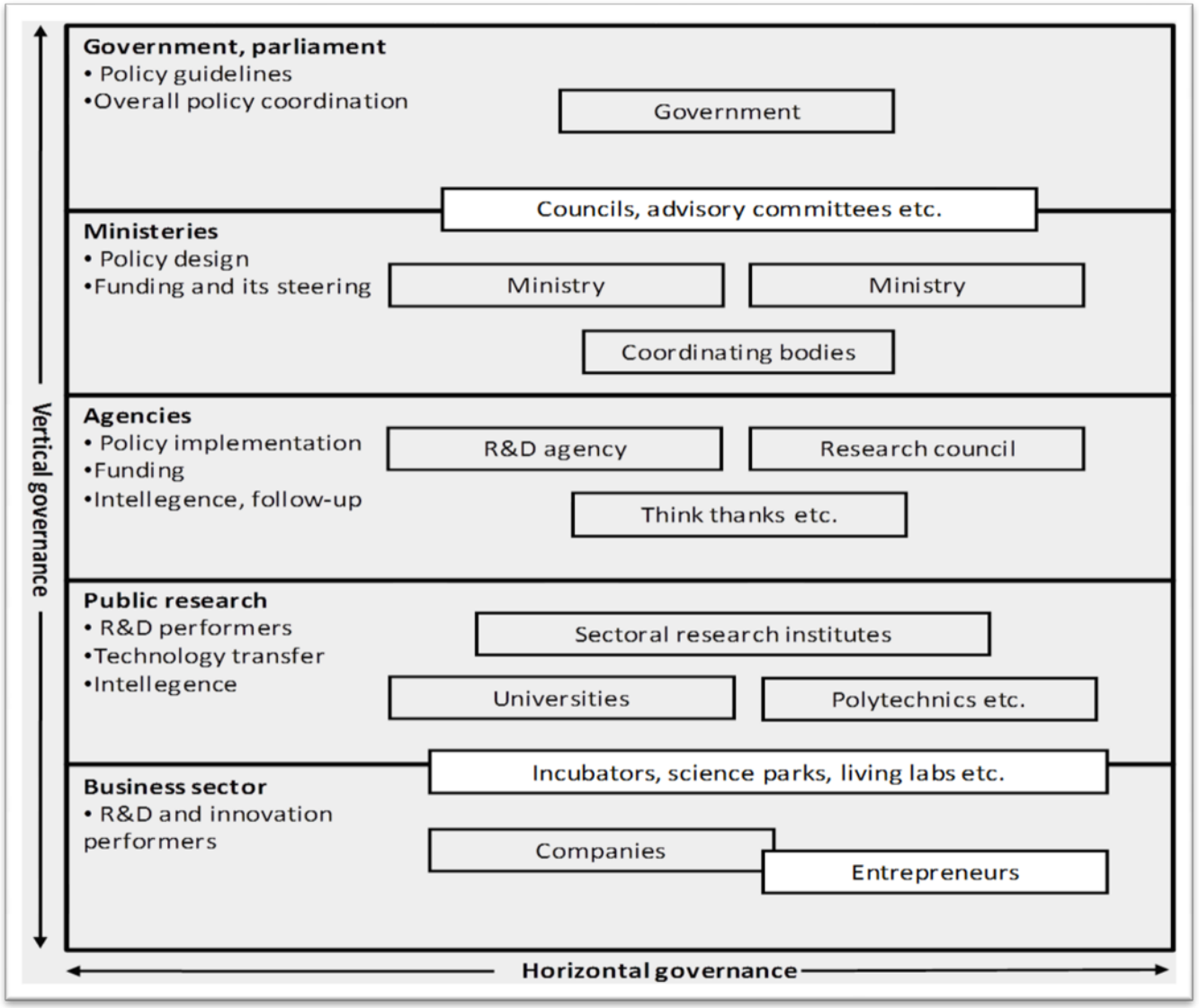
Increasing complexity:

- Innovation and STI policy have become more strategic for any nation.
- Pressures for **prioritisation** in STI has increased.
- Innovation and technical progress are the result of **a complex set of relationships** among actors producing, distributing and applying various kinds of knowledge.

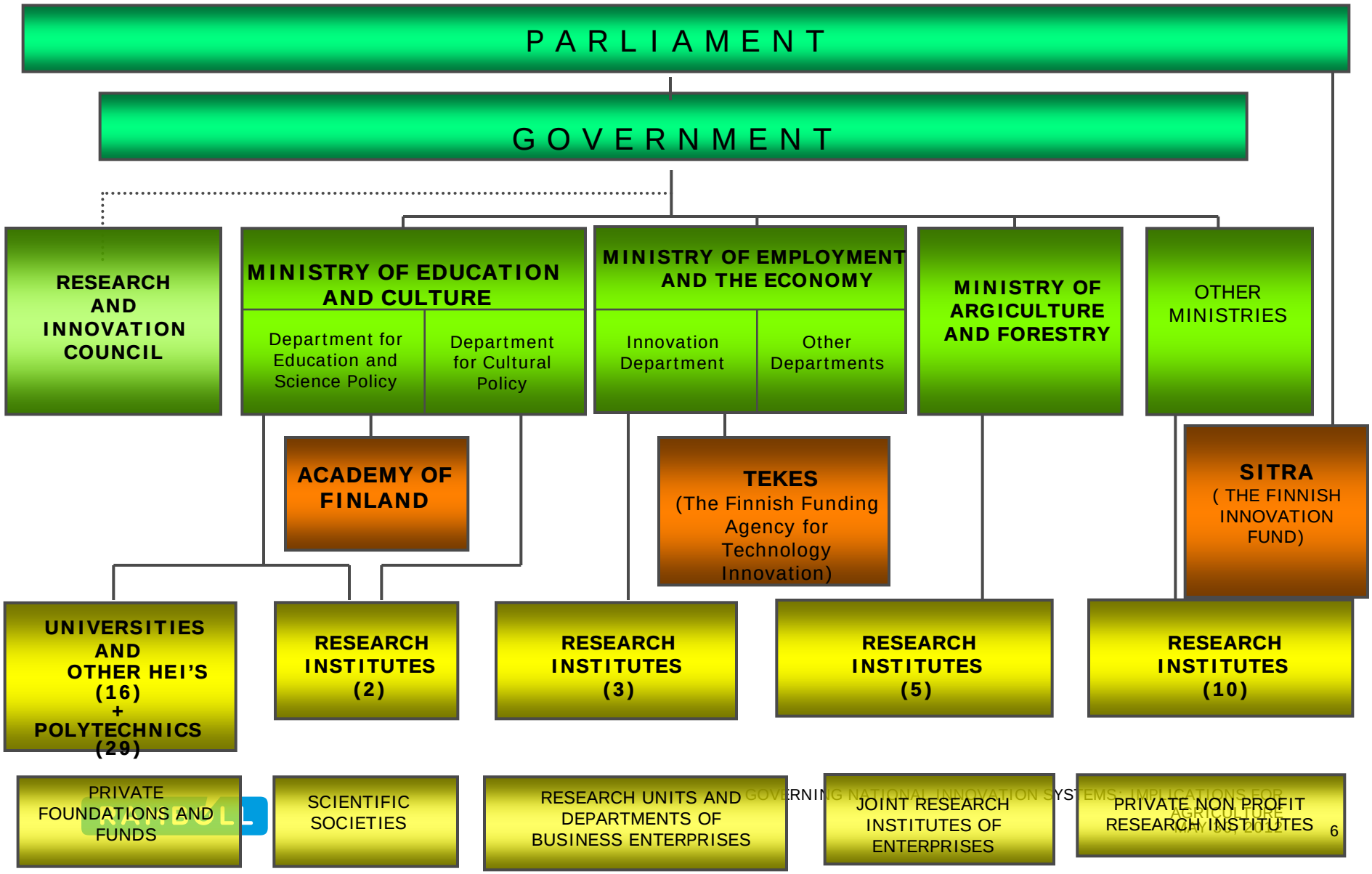


- Public/private **partnerships** have emerged as a new instrument of policy delivery.
- The linkages can take the form of joint research, personnel exchanges, cross-patenting, purchase of equipment and a variety of other channels.

TYPICAL GOVERNANCE STRUCTURE OF NIS



A GOVERNANCE ARCHITECTURE OF FINNISH NIS



LESSONS TO BE LEARNED TO NIS GOVERNANCE & IMPLICATIONS FOR AGRICULTURE

- Strong, visible commitment at the highest level
- A considerable role for high level councils
- Strategic intelligence for priority setting and evaluation
- Mobilizing actors and resources
- Full support to agents of change
- Intensive collaboration
- Transparency

STRONG, VISIBLE COMMITMENT AT THE HIGHEST POLITICAL LEVEL

- Progress in development of an innovation systems takes time (decades rather than years), and requires consistency and patience from stakeholders of the system.
- Because of that, **consensus and commitment to basic guidelines of innovation policy among key actors of the system is** a necessary condition for progress.
- However, consensus building must not mean exclusion of divergent opinions, because **innovations grow up from variety and its social acceptance more than from a narrow scope of opportunities.**

A CONSIDERABLE ROLE FOR HIGH LEVEL COUNCILS

- **Governments in many countries have set up councils for overall coordination of science, technology and innovation policies.**
- **The councils have proved to be efficient mechanisms for creation of consensus and commitment at the highest political and administrative level.**
- **The resulting policy does not or need not favor centralization**
- **The councils are very much advisory bodies which lean more on prestige than power.**

- *Mexico's National Council for Science and Technology, CONACYT*
- *Research and Innovation Policy Council, Finland*
- *Chile's National Commission for Scientific and Technological Research, CONICYT*
- *National Science and Technology Council, Korea*
- *Council for Science and Technology Policy, Japan*

STRATEGIC INTELLIGENCE FOR PRIORITY SETTING AND EVALUATION

- Capabilities and mechanisms to set priorities are vitally important to make full use of scarce financial and human resources.
- Obtaining and analyzing intelligence on market and technological developments and trends is nowadays high on the agendas innovation policy making bodies.
- Improved means of evaluating the inputs, activities, outputs, and impacts of R&D and innovation are needed to manage R&D organizations and instruments and provide important feedback for policy making.

- *Strategic analysis*
- *Benchmarking*
- *R&D and innovation statistics*
- *Technology foresight*
- *Ex-ante evaluation*
- *Interim evaluation*
- *E-post evaluation*
- *Impact indicators*

NORMAL PROCEDURE FOR PRIORITY SETTING (PROGRAMMING)

- The government and/or the high level council defines the nationally strategic (critical) fields of R&D (in terms of societal challenges, and scientific and technological sectors), and delegates further elaboration of the fields to a specialized R&D agency (or agencies).
- In collaboration with various actors of the innovation system the agency prepares more specific R&D, technology and innovation programmes and budget funds for implementation of the programmes.
- The agency publishes an open call for proposals, and through a peer review or corresponding process make funding decisions based on proposals made by actors of the R&D and innovation community.
- The R&D projects are carried out by researchers and research groups in universities, research institutes and companies.

MOBILIZING ACTORS AND RESOURCES

- Clear visions, strategies, and priorities are significant instruments for mobilising actors of an innovation system to work together for common and commonly accepted goals.
- Leadership is also needed from representatives of key public and private actors.
- Finding a proper balance between top-down and bottom-up is one of the main challenges of builders of any innovation systems.

FULL SUPPORT TO AGENTS OF CHANGE

- **In many countries, policy implementation and management of R&D and innovation funding have been delegated to the level of specialized agencies.**
- **These agencies have acted and act not only as distributors and administrators of public funding but also - and particularly - as innovators of innovation systems.**
- **The staff of the agencies has been recruited from high-level professionals of financing, and R&D and innovation management complemented by continuous training of the staff.**
- **The agencies have relative managerial autonomy to set their priorities, agendas and to allocate their funds to individual projects.**
- **Delegation of managerial authority is usually accompanied by stronger requirements to report outputs and outcomes of the agency.**

- ***Finnish Funding Agency for Technology and Innovation, TEKES***
- ***Swedish Governmental Agency for Innovation Systems, VINNOVA***
- ***Financing of Innovation, Science, Technology (Fund), FINCYT, Peru***
- ***Innovation and Competitiveness of Peru's Agro Sector (Fund), INCAGRO***
- ***Technology, Innovation Agency, TIA, South Africa***
- ***The Chilean Economic Development Agency, CORFO***

INTENSIVE COLLABORATION

- **Innovation increasingly relies on collaborative processes which involve a range of actors *(firms, users, researchers, consumers, non-profit organisations, NGOs, etc.).***
- **One of the main characteristics of a well-functioning innovation system is lively cooperation among various actors both vertically and horizontally.**
- **Governments have in hand a great number of instruments for increasing and intensifying interaction and collaboration in innovation.**
- **Policy implementation of collaborative measures may best be facilitated at the level of relatively autonomus agencies and other organizations.**

- *Public – private parnerships*
- *Collaboration ventures*
- *Intersectoral (-ministerial) collaboration*
- *Integration of users and customers with innovation processes*
- *Innovation forums*
- *Innovation and technology platforms at national, regional and local levels*
- *Platforms for open innovation*
- *User communities*
- *Living laboratories*

TRANSPARENCY

- Transparency should be one of the basic elements of any governance system.
- The core issue of transparency is that information is freely available and directly accessible to those who will be affected by decisions of governing bodies.
- Involvement of the wider innovation community (stakeholders) is a necessary precondition for transparent and at the same time fruitful policy design and implementation.
- In the allocation of R&D and innovation funds open competitive funding is an effective mechanism to ensure realization of transparency.

BENEFITS FROM GOOD GOVERNANCE VS. COSTS OF BAD GOVERNANCE

- **Many of the benefits of good governance result from growth in trust** ("it lubricates the engine of any organization")
- Less conflicts
- Lower transaction costs
- Increased confidence and commitment
- Improved motivation of employees
- Better and more relevant decisions thanks to a better and more reliable knowledge base
- ***All in all, a well governed NIS performs effectively and brings added growth and improvements in quality of life!***
- Good governance helps in good and bad times

SUMMARY: ACTIVITIES AND CAPABILITIES & GOVERNANCE STRUCTURES NEEDED IN NIS (1)

1. **Ability to perceive and respond to challenges**
   - Often embedded in the NIS as a whole, at all levels of governance
   - Councils, advisory committees and similar groups subordinate to the government or parliament often play an important role in responding to these challenges by creating a common vision, or consensus, of how to address them.

2. **Ability to set policy priorities and coordinate agendas**
   - Often embedded in ministries (or department equivalents) that also design policies and steer funding to sectoral agencies or directly to public research organizations.
   - Often vertically linked to the government through various councils and advisory committees.
   - Ministries also frequently establish dedicated coordination bodies

SUMMARY CONT'D (2)

3. **Ability to implement and manage policies on a day-to-day basis**

- Often failed owing to competing rationales between ministries, lack of political will and funding, changing external developments
- Often delegated to the level of agencies, for example to R&D agencies

  → strengthen the capacities of these agencies/establish a new agency.

4. **Ability to obtain and process intelligence on the impacts of innovation policy as well as future technological and market trends**

- Relate to technology and innovation studies, development of STI indicators, evaluations of R&D programs, and other types of policy instruments and interventions, as well as technology foresight and assessment.
- Often spread out in the NIS; for example, ministries and agencies typically have their own research and analysis units

THANK YOU VERY MUCH!