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Prioritisation in STI policy
Lessons from five countries for the Netherlands

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Dutch context

- 2008: Cabinet's LT strategy (vision for 2030)
- 2009: development of a Multi-Annual Innovation & Knowledge Compass (MIKK) i.e. an investment agenda for 2012-2030
- Aim MIKK: a coordinated, inter-departmental approach to STI investments
- Current situation: many themes, many initiatives, many instruments
- MIKK project: Create more **consistency & continuity** in STI priorities (and broad support in society)

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Steps in the MIKK project

- Map existing priorities in NL
  - *'key areas', 'peaks in the delta', university sector plans, themes of NWO, themes of TNO, societal innovation agendas, …*
- Develop an assessment framework
- Group & classify thematic areas
  - *from a map to a 'landscape with peaks'*
  - *based on added value for NL and opportunities for collaboration (PPP)*
  - *demonstrate large economic and scientific potential and contributions to solving societal challenges*
- Develop method to operationalise the 'landscape with peaks' into coherent packages of themes and options for funding (programmes)

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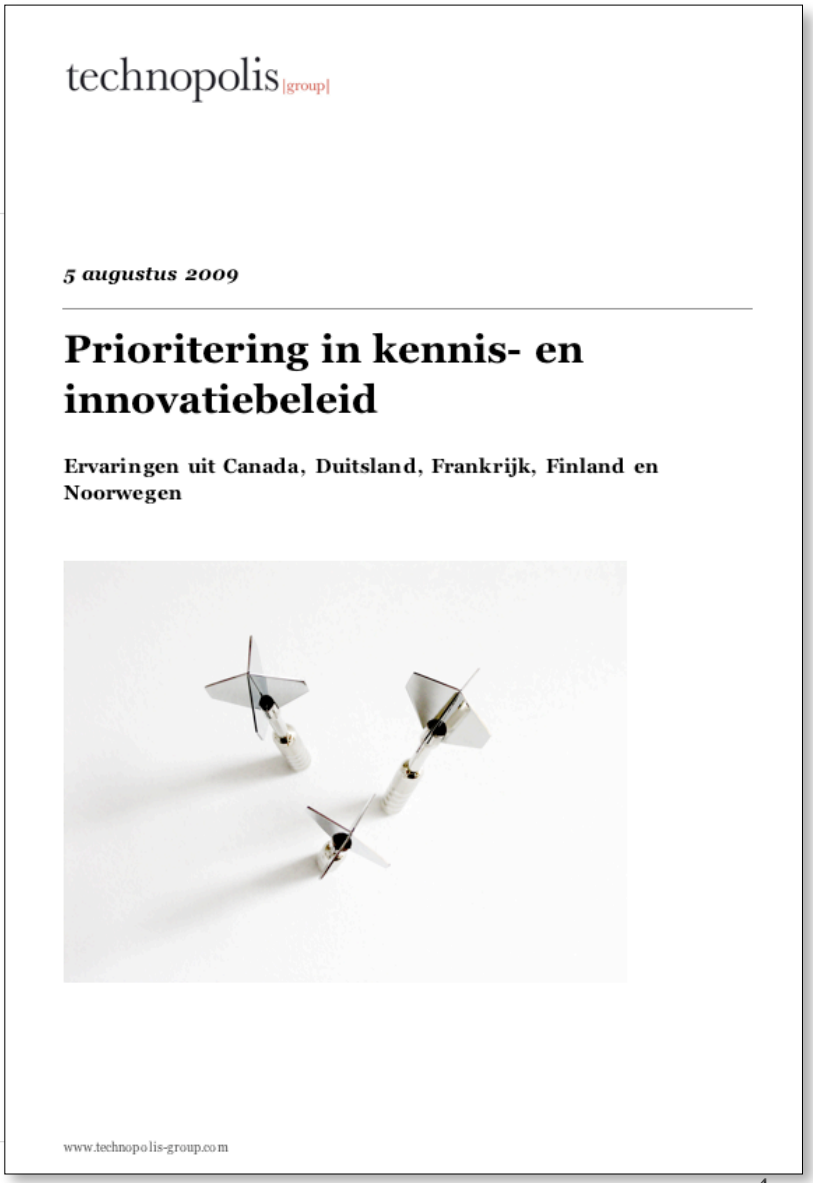
Our study

- Aim: lessons for NL from how other countries select STI priorities
- Case studies of Canada, Germany, France, Finland and Norway
- Items in each case study:
  - *Type of thematic priorities*
  - *Selection methods*
  - *Decision-making processes*
  - *Results of priority setting*



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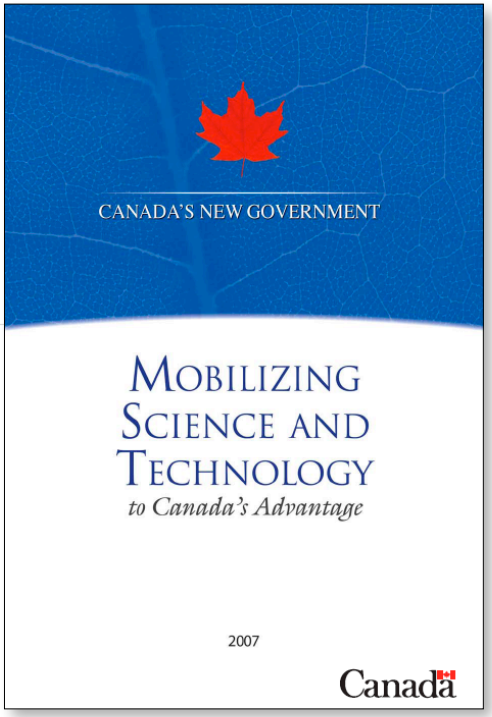
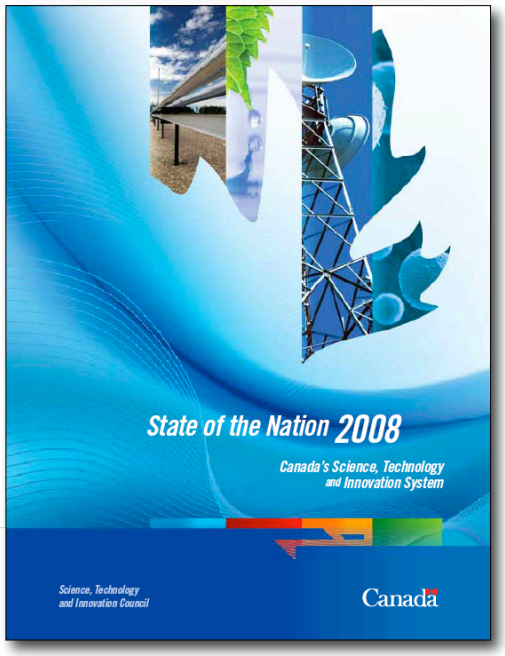
Example: Canada

- 2006: four broad S&T priorities identified by Council of Canadian Academies
  1. *Environmental S&T*
  2. *Natural resources and energy*
  3. *Health and related life sciences and technologies*
  4. *ICTs*
- Based on "analysis of strengths and opportunities in areas where Canada can leverage its research strengths to achieve economic and social advantage."
- Methods: opinion survey among experts, metrics, view from abroad, literature
- 2007: new federal S&T strategy
- 2008: new STI Council identifies 13 S&T sub-priorities
- Sub-priorities as strategic framework for all actors in STI governance system (research councils)





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Sub-priorities in Canada

S&T priorities (CCA)	Sub-priorities (STIC)
Environmental science and technologies	Water, with specific focus on: - health - energy - security Cleaner methods of extracting, processing and using hydrocarbon fuels, including reduced consumption of these fuels
Natural resources and energy	Energy production in the oil sands Arctic: - resource production - climate change adaptation - monitoring Biofuels, fuel cells and nuclear energy
Health and related life sciences and technologies	Regenerative medicine Neuroscience Health in an aging population Biomedical engineering and medical technologies
Information and communications technologies (ICTs)	New media, animation and games Wireless networks and services Broadband networks Telecom equipment

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Some observations from Canadian case study

- Canada is relatively small, has US as neighbour, must make clear choices
- S&T plays strategic role in Canada's future
- Start with only four broad themes
- Further elaborated in specific sub-priorities, building on national 'knowledge advantages' → combination of 'excellence' and 'relevance' (economic *or* societal)
- S&T priorities increasingly demand driven (rather than technology driven)
- Involvement of external advisory bodies (first CCA, later STIC)
- Advice taken over by minister, incorporated in federal S&T strategy
- Broad support for strategic framework as explicit goal (also within government, federal - regional)
- Agencies have to adopt S&T priorities in their strategies and programmes

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1. Characteristics of thematic priorities

- Content:
  - *All/most countries have priorities with respect to the global challenges and emerging technologies*
  - *All countries have country-specific themes (specialisation patterns, geo-location)*
- Types
  - *Mostly combinations of* existing *strengths in S&T and strong business sectors or societal challenges*
  - *Increasingly also* potential *strengths and emerging sectors*
- Sharpness
  - *Mostly broad themes; to be elaborated in implementation phase*
  - *Implementation organisations play important role in sharpening*

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2. The filtering process

- Typical phases:
  - *Map strengths / opportunities in S&T*
  - *Assess national strengths / opportunities in terms of economic and/or societal relevance*
  - *Decide which themes are prioritised*
  - *(Elaborate themes into sub-themes)*
  - *Develop (thematic) programmes*
- Differences and similarities:
  - *Stakeholders involvement (source of intelligence, broad support)*
  - *Use of external advisory bodies (and in which phases)*
  - *Use of strategic intelligence, external studies, foresights (or reflecting known strengths)*
  - *Various combinations of bottom-up and top-down processes*
  - *Different criteria, also depending on specific aims of prioritisation*
- Double aim: evidence-based priorities *and* broad support

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3. Decision-making process

- Who decides depends on
  - *Political culture*
  - *Governance structure (ministries vs agencies)*
  - *Level of controversy of the choices*
- What has to be decided
  - *Redistribution of resources*
  - *Allocation of new resources*
  - *Strategic framework for longer term*
- Decisions made at multiple levels
  - *Minister / government has final responsibility*
  - *Implementation bodies have varying degrees of autonomy in operationalising the themes into programmes*
  - *Design and openness of the programmes (open or thematic)*

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4. Results of priority setting

- Results in terms of shifts in
  - *STI system*
  - *STI policy*
  - *Funding of the STI system*
- Little evidence of impact on international knowledge position or competitiveness
- Implementation bodies do use the priorities
- Coordination between ministries improves
- Selected themes do get additional funding

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Recommendations to MIKK on types of priorities

- Look for themes that combine S&T excellence and economic/societal relevance.
- Create a portfolio of existing/proven and emerging/promising
- Do not forget cross-cutting 'enabling' S&T areas (*e.g.* nano, ICT)
- Select distinguishing national priorities, with reference to international division of labour
- Keep # priorities small — be clear about what is *not* a priority
- Thematic funding should not be at the expense of the funding of the regular S&T system — be clear about this

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Recommendations on filtering process

- Prioritisation as continuous process, with multiple phases and levels
- Start with broad themes at national level
- Further delineation and specification in implementation phase
- Use transparent processes and clear criteria in implementation phase
- Use prioritisation exercise to establish a national strategic framework for all ministries and implementation bodies
- Strong leadership, high-level commitment is needed
- Involve implementation agencies
- Involve stakeholders — and manage expectations
- Use qualitative assessments that integrate multiple dimensions

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Recommendations on decision-making and implementation

- Ensure high-level commitment on thematic priorities
- Make prioritisation part of broad strategic process for the long term; include also functional priorities

- Be clear about division of responsibilities between ministries / agencies for implementation of each theme
- Make prioritisation a continuous process with periodic updates & evaluations
- Ensure selective continuity; give thematic areas enough time to develop and flourish

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Thank you

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