



Research, Development,
and Innovation:
Strategy Proposal for
Sustainable Growth

April 2009

Summary

To face the current economic crisis as well as the climate crisis, international mobilisations of actors and resources are of great importance. VINNOVA's strategy proposal for countering the crises therefore goes above and beyond initiatives that could be initiated, coordinated, run and realised by VINNOVA. Instead, it has a strong focus on coordination as well as synergies between regional, national and international initiatives. This is a prerequisite to counteract fragmentation and dilution of Sweden's resources, on both regional and national level.

VINNOVA identifies specific opportunities stimulating innovation investments especially in five different areas:

- *Adaptation of Swedish automotive industry to meet future demand*
- *Innovation in small and medium sized companies and innovation based start-ups*
- *Measures for strengthening demand in future growth areas*
- *Regional mobilisations of resources and actors for innovation and competitiveness*
- *Internationalisation for economic growth and job creation in Sweden*

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1 Introduction

Economic crises are followed by important structural transformations, which often give rise to possibilities for innovation and economic growth. Innovation investments and incentives for entrepreneurs are needed in order to promote these opportunities. Different measures can be designed to reach desired results. It is of essential importance to design those measures so that they clearly focus on innovation. However, during economic recessions organisations tend to prioritise short-term objectives when allocating resources. Therefore, specific public measures to stimulate research, development and innovation investments are of outmost significance for Sweden's future competitiveness.

This strategy proposal concerns specific initiatives adapted to address the current economic situation. The proposal focuses on measures promoting research and development for innovation and renewal during the economic crisis. In this manner, Swedish competitiveness can be strengthened when the economic situation turns back.

The proposed measures are clearly focused on effects. Also, investments are meant to be long-term and sustainable in order to promote transformation and renewal of Swedish trade and industry, as well as specialisation and mobilisation of resources and actors in Swedish regions. The basic idea is to:

- Facilitate access to important research and development competence for enterprises, which they cannot afford to finance themselves during the economic recession.
- Support and stimulate mentioned research and development competence for the development of substantial renewal projects with potential for significant impacts during the economic recession. This intention concerns particularly the Swedish automotive industry and its subcontractors, but must also include other sectors and in particular small and medium sized enterprises.
- Focus on increased public expenditures in research, development and innovation, in order to develop Swedish competitiveness within future global growth areas.
- Give tailor-made regional support for research, development and innovation investments aimed at specialisation, mobilisation of resources and increased competitiveness on future growing markets.

An effective interplay between private and public resources is more necessary than ever during current economic circumstance. Interaction between companies, universities, research institutes, national authorities and regions must be designed to create both short-term and long-term value-added effects. Special internationalisation efforts are needed for reaching sustainable ecological and social long-term economic growth.

It is urgent to give an overall picture of what measures to undertake and the extension of such undertakings. Also, it must be indicated what is needed from cooperating partners to achieve a forceful implementation of the measures, as well as establish how VINNOVA can contribute in this work.

2 Global financial crisis and deep global recession

The current economic and financial crisis is a global phenomenon, affecting virtually all countries in the world. Sweden is especially vulnerable due to big export dependence. There are several reasons for this:

- In the global economic crisis, the demand for Swedish export products falls dramatically due to the considerable decline in world-wide demand. This affects strongly Sweden's export industry, which accounts for about half of Sweden's gross domestic product.
- One direct consequence of the fall in demand for export products will be a restructuring of export firms, which will strongly decrease their possibility to invest in innovation and long-term renewal.
- Also, the financial crisis makes it difficult for enterprises to access credits and capital aimed at innovation investments, since such investments are often characterised by high uncertainty.
- The lower rate of investments in innovation from export-based companies lessens the demand for innovation services from research institutes, universities and companies, particularly affecting skill-intensive small and medium sized companies.
- The investments in innovation made by small and medium-sized companies are thus hit extra hard by the economic crises. They are affected directly by the finance crisis and indirectly, via decreasing demand from large companies and the public sector.
- Entrepreneurs and new enterprises are in a similar position, due to the same fundamental causes that affect older small and medium sized companies. Additionally, new businesses are especially vulnerable to credit crunches, since in a crisis, the supply of risk capital in the economy is even smaller than the (reduced) general credit that is available to established firms.
- Likewise, public investments in innovation and demand for innovative solutions are strongly restrained, due to the need to relocate resources to cope with current activities. This affects all regions and municipalities in the country.
- The ability of regions to invest in structural transformations is strongly hampered by the decline in private and public investments in innovation. This is problematic, since such transformations are decisive for future economic growth and job creation in a region.

As seen above, a reduction of the budgets for investments in innovation is to be expected. It is however impossible to anticipate the seriousness of the consequences, but the deeper and more long-drawn the economic crisis becomes, the more serious the effects will be. VINNOVA follows this development closely.

3 Conditions for sustainable growth in Sweden

In Sweden, as well as in other countries, there is a growing awareness of the fact that social development today cannot take place at the expense of future generations' possibilities to support themselves and enjoy a good quality of life. Apart from the societal benefits, countries that become market leaders in transforming into sustainable societies have a lot to win. The demand for environmental technology and environmental friendly system solutions is growing strongly and environmental durability is an increasingly important driving force in the development of new technology, materials, means of transportation and infrastructure. In the

future, durability aspects in products will become a regular element for competitiveness and success for industry.

The demand for durability encourages structural transformation in industry. Structural transformations are further boosted by the financial crisis and economic recession, as both *strongly changing future market opportunities and conditions for investments in research, development and innovation*. To survive in the long term, companies must achieve a significantly improved performance in goods, services, systems and processes, compared to what is offered today. For this, they need access to new knowledge and to research and development capabilities. Future economic growth and job creation will be dependent on this in many sectors. Hence, the future will probably see a significant structural change of the trade and industry sector, both nationally and internationally, towards an economy based partly on new knowledge.

In a knowledge-based economy, industry competitiveness and profitability and countries' economic growth and prosperity are largely determined by the ways new knowledge is generated and used. The more efficiently knowledge can be transformed into innovations, i.e. new products, services, processes or organisational solutions, the more value added is generated in society. Through a high level of knowledge and competence, combined with developed system know-how, Sweden has possibilities to maintain and develop its competitiveness. This requires that the creativity in Swedish industry, public sector and regions is exploited.

In Sweden, there are good possibilities for development and growth within the environment and energy sectors, which are strongly linked to Swedish know-how and prerequisites in the transport sector. Combined with knowledge in the security sector and a strong information and communication technology sector, the nation has much potential for a continued strong industrial development. The information and communication sector stands for almost half of Sweden's productivity revenue¹ and consists of innovative high-quality products and services within almost all areas of society.

The global demographic development will give rise to a large socio-economic challenge. In the future, generations of better informed, healthier and financially stronger individuals will require and demand more healthcare, services and higher quality housing. Examples of fast growing sectors in this context are: IT based services and new medical technologies for individual prevention in health care, home healthcare and decentralised healthcare.^{2 3} Moreover, there will rise new medical challenges, which can be met by Sweden thanks to its strong research base that can promote a continued strong pharmaceutical industry and biotechnology sector.

Sweden has traditionally taken advantage of an open international trade system. However, it is *not* obvious that Sweden will be able to profit from the ongoing globalisation in the future. The Swedish market is not big enough to motivate international companies to locate production in Sweden. For a country of Sweden's size, special internationalisation support measures are

¹ European Commission, "FP7 - Tomorrow's answers start today", http://ec.europa.eu/research/fp7/pdf/fp7-factsheets_en.pdf.

² Ministry of Health and Social Affairs, *Swedish Strategy for eHealth - safe and accessible information in health and social care. 2008 Status Report*, S2008.029, <http://www.regeringen.se/content/1/c6/11/48/73/bc8a2ecc.pdf>.

³ *Health Care IT Focus Report*, Deloitte and Silicon Bridge, <http://www.ehealthurope.net/researchreports/R1ehealth.pdf>.

required to attract more foreign direct investments, or to promote Swedish industry establishments on other markets.

4 Strategy proposal: sustainable growth through research, development, and innovation

The research and innovation bill for 2009 that was presented by the Swedish government in October 2008 allocated substantially more resources for long-term research. This was achieved especially through increased direct funding to universities, as well as by large-scale investments in strategic research areas. The investments will strengthen conditions for the development of internationally competitive research environments in Sweden. They also contain the prerequisites needed to strengthen the focus on utilisation and application of knowledge within important future growth areas. For this to happen, resources distributed within the framework of the investments must generate an effective collaboration between universities, research institutes, companies and the public sector. To reach the objectives of the investments, a common responsibility now rests on responsible authorities and other actors. Intensive work is required during spring 2009.

In order to meet the prevailing economic crisis, VINNOVA's strategy proposal is formulated to *complement* ongoing and planned work within the framework of already allocated resources and planned missions for 2009. The strategy proposal also complements long-term investment measures that promote innovation. Measures to boost innovation are vital and are needed as long as the global financial crisis and the economic recession deepen.

VINNOVA's possibility to contribute with initiatives during the prevailing economic situation rests on the authority's considerable competence within areas that are central to sectors such as transport, security, health, materials, nanotechnology and information and communication technology. The authority also has long experience in developing strong research and innovation environments through collaboration between different public and private actors, as well as developing regional, sectorial and national innovation systems.

Collaboration with other actors is emphasised in VINNOVA's proposals. The proposal is not limited to initiatives that can be initiated, coordinated, run and realised by VINNOVA itself. However, the proposal has not yet been discussed with other authorities. Still, it is more essential than ever that collaboration takes place to renew Swedish industry and public sector, so that Sweden can emerge from the crises with strengthened international competitiveness.

VINNOVA identifies five particular possibilities to stimulate investments in innovation:

- *Adaptation of Swedish automotive industry to meet future demand*
- *Innovation in small and medium sized companies and innovation based start-ups*
- *Measures for strengthening demand in future growth areas*
- *Regional mobilisations of resources and actors for innovation and competitiveness*
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Adaptation of Swedish automotive industry to meet future demand

Competitiveness of future markets for road traffic will presuppose very low emissions. Demand for solutions that effectively leads towards a vision zero in this respect will be powerful for the coming decades. The companies that cannot meet this demand will quickly be concurred out of

the market. These new market conditions will strongly impact the structural transformation and the growth in many countries, especially Sweden where this sector is important.

To assist Swedish automotive industry the objective is to considerably increase mobilisation of resources and actors within the transport area during and after the years of the economic crisis. The goal is to totally adopt high environmental objectives combined with security and system development for an international competitive automotive industry and transport system that meets society's requirements on sustainable growth.

Many relevant proposals for research, development and innovation investments are presented from different actors. The proposals include various research centres at universities and higher education institutions for long-term research projects and institutes, often combined with recruitment of skilled staff from the automotive industry. The aim for Sweden is to not lose skilled personnel when the industry is forced to lay off personnel and to carry out long-term research and development, with strong innovative elements.

Some proposals include the idea of developing long advanced industrial projects for future solutions of product, process or services with large international competitive potential. The latter often builds on strong collaboration between different parties with large company participation. It should be noticed in the current situation that Sweden has specific favourable preconditions for the development and manufacturing of heavy vehicles, promoted by an appropriate mix of initiatives and measures stimulating future development.

Ongoing research and capacity building long-term investments within The Vehicle Research Programme is important in order to support a continued development of a sustainable automotive industry with a broad spectrum of suppliers. The program is run by representatives of several Swedish authorities and public companies including VINNOVA. Public research investments in the transport area are now being further increased through the Swedish government's research and innovation bill covering the period 2009-2012: A Boost to Research and Innovation.

A leadership that successfully persuades to uphold the activity in an international context is necessary and must be developed. This mostly concerns those areas where Sweden already has a strong international position, for instance in the environment sector, the safety sector and the transport effectiveness sector. These are relevant fields of research irrespective of the industry in order to develop the vehicles for the future. Swedish success within future automotive industry is probably built on combinations of success factors from cross sector solutions. Continued development in the area of IT and telecommunication is anticipated.

An equally important area for Swedish competitiveness is transport efficiency. Sweden's geographical position and strong trade dependency makes transport efficiency in the form of safe vehicles and traffic systems of utmost importance for reaching competitive logistics and transport costs and reduce the environmental impact. In order to maintain a leading international position within the area, a holistic vision is needed, from supply chain management to the formulation of a cost-effective distribution system with intelligent IT system solutions. These are strong Swedish areas that should be coordinated and developed further.

Developing car test facilities is another important element in the variety of proposals. Sweden has a large potential to develop a global competitive test industry since the country possesses a large automotive know-how with high concentration of academies and automotive manufacturers. Thanks to the global competitive cluster for vehicle testing in cold climate that has been established in northern Sweden during the last 30 years, the country has a good starting point.

Sweden is a sufficiently large country for field tests and as a lead market with good collaboration possibilities between industry, government authorities and universities. Sweden's low population density, compared with central Europe, gives very good access to land and the establishment of new test sites can be granted by authorities.

For electric cars testing Sweden can offer an electricity mixture with very low CO₂ content and a general safely and environmental friendly way to drive. Sweden can be a leading country and demonstrate how new technology can be used and become an international trendsetter. There are many examples of Sweden becoming a trendsetter for the E85-conversion, the use of safety belt, the use of light during daytime and the use of air bags.

For Sweden it is vital to participate in international collaboration projects in order to give Swedish automotive industry access to the leading facilities and test methods. This will allow the Swedish automotive industry to influence actual standardisation processes that take place in the test environments.

Test Site Sweden (TSS) is an interesting example of an investment that can represent Swedish automotive industry in the area of verification and validation. This investment also makes the participation in European projects more effective. Sweden has good possibilities to establish itself as a leading country in the test sector for new vehicle technology. Thereby also taking a leading role as a verifying and validating specialist in the ongoing transformation of the European research and development system.

The challenges that Sweden faces regarding innovation and renewal for Swedish trade and industry can result in a viable transformation of the national automotive industry. The goal is to proceed with car manufacturing and alternative industries arising from the transformation based on competitive and international research and development. Main focus lies on prioritised areas for Swedish automotive industry such as safety, environment and transport efficiency.

In the light of the above, VINNOVA's suggestions concern both short-term and long-term investments. The short-term suggestions have a direct impact on the current situation (year 2009) and are met by resources already distributed by the government. To ensure a more radical renewal VINNOVA suggests an increase of resources for innovation activities of **500 million SEK for 2009 and 1 billion SEK per year for ten years starting 2010** to be managed by several actors (in addition to 3 billion SEK that the government already has allocated in a public company named Fouriertransform).

Innovation in small and medium sized companies and innovation based start-ups

The investments in innovation made by small and medium-sized companies are hit extra hard by the economic crises, since such companies are affected both directly by the finance crisis and indirectly, via decreasing demand from large companies and public organisations. *Start-up firms* are also hit hard, due to the same fundamental causes that affect older small and medium sized companies. Additionally, new businesses are especially vulnerable to credit crunches, since in a crisis, the supply of risk capital in the economy is even smaller than the (reduced) general credit that is available to established firms. Small and medium-sized companies as well as new enterprises are very important for radical innovation, industry renewal and job creation. Because of this, special initiatives to strengthen demand for innovation investments in small and medium-sized companies, and make available capital for such investments, will have a great impact on the renewal force that they represent in Swedish economy.

With this in mind, VINNOVA suggests increased public activities during the next few years aimed at stimulating investments in research, development and innovation in new enterprises

and in small and medium-sized companies. Special focus should be put on prospective growth areas linked to areas such as environment, energy, health, security, transportation, IT and telecom. Suggested activities are:

- Developing a large Small Business Innovation Research program (SBIR) in Sweden
 - a) An increase of VINNOVA's Research & Grow-programme with 300 million SEK, to 420 million SEK. This includes a decision by VINNOVA to strengthen the programme with about twenty million SEK for environmental technology projects. The Research & Grow-programme has raised much interest since its start, with companies applying for up to 1 700 million SEK per year. The large number of projects applications with potential for good results justifies expanding the programme to the level suggested above.
 - b) A broadening of the Research & Grow-programme to include other public authorities than VINNOVA. There should be links to such authorities' research and development budgets, as well as to their purchasing activities. 200 million SEK are needed for this. Swedish research and innovation authorities must cooperate to ascertain that competences, tools and experiences from innovation work in general, and the Research & Grow-programme in particular, are used. This will assure that a Swedish SBIR-system is efficiently introduced. In order to achieve fast-appearing and desired effects, new resources are needed that are tailored to the objectives.
- Increased investments in commercial and technical verification and validation of research results with commercial potential. This measure could be handled with VINNOVA and the Innovation Bridge together with the Swedish Energy Agency, the Swedish Research Council, the Swedish Council for Working Life and Social Research, the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), the Swedish Foundation for Strategic Research (SSF) and the Foundation for Strategic Environmental Research (MISTRA). A possible investment size is 200 million SEK per year. (VINNOVA would be primarily responsible for the measure).
- Introducing innovation measures to strengthen demand, where small and medium-sized enterprises and start-ups play important roles. See below.

Measures to strengthen demand in future growth areas

The development of markets constitutes the most fundamental economic driving force for innovation and entrepreneurship. Public demand plays a big role, both in the origin of markets for new products and services, and in the development of existing markets. Depending on how public needs are formulated into demand, they either constitute a driving force for innovation and renewal, or reinforce or conserve existing structures in the economy. A positive interplay between public demand and innovation investments can strongly contribute to industry competitiveness, while at the same time satisfying public needs. Such *development blocks* have historically been important for the international competitiveness of Swedish industry.⁴

⁴ The Royal Swedish Academy of Engineering Sciences (2005), *Challenges for the State, the business community and research. About knowledge, strategies and growth promoting activities on deregulated markets* (Utmaningar för staten, näringslivet och forskningen. Om kunskap, strategier och tillväxtfrämjande aktiviteter på avreglerade marknader).

The incentive structures for innovation that affect companies and entrepreneurs are to a large extent formed by political decisions and policies. The impact of such decisions and policies is especially crucial within certain areas and for certain developments. Thus, there are great opportunities to deploy innovation policy measures that support the development of so called *lead markets*, which constitutes a central area in the innovation political agenda of the EU. In this context, it is claimed that the relatively limited focus on demand-side measures in the union is a significant factor that hampers EU competitiveness compared with other regions in the world.

Demand stimulus is a strong driver for innovation that will contribute to speed up structural transformation. During crises, new industries with potential for future growth will emerge and gain importance, aided by demand-side measures, while products and activities that are unable to compete will perish. In that context, demand-side measures can contribute to create platforms for research and development competences that need to switch area in which to work.

It is often acknowledged that radical renewal is sometimes necessary in order to satisfy society's long-term need of development. Also, it is known that public demand for innovation processes can be an important driver for increasing industry competitiveness. In spite of this, the incentives for public authorities to invest in innovation are weak or negative, while public measures to encourage such investments are unusual or ineffective. The risk of procuring an innovation for an individual public decision-maker or organisation is often considered considerably bigger than the relatively uncertain profits that can be achieved. Still, society's investments in such innovation processes are often fundamental for achieving important societal breakthroughs.

Economic growth, job growth and an ecological and socially sustainable society can be promoted by new radical environment and energy solutions, radical breakthroughs within health and security and technical innovations within the information and communications area (as well as IT applications within other areas). Strengthening public demand on such solutions in Sweden will powerfully contribute to improve Swedish competitiveness in the ongoing economic crisis.

Several measures can be used to encourage public demand for innovative solutions. Among these are tax regulations, standardisations, public procurements, public investments in demonstration facilities, etc. It is important that different measures efficiently interplay.

VINNOVA particularly wants to stress the need and importance of two types of public investments to stimulate demand for investments that strengthen competitiveness and renewal. The first type is demonstration plants and the second is public procurement of innovation. Within the framework of the proposals below, special goal-oriented mobilisations of resources and actors can be developed in cooperation between the state, certain regions, the European Regional Development Fund and public authorities like VINNOVA, the Swedish Energy Agency, the Swedish Agency for Economic and Regional Growth, etc. VINNOVA suggests that:

- *Investment support on a significant scale should be made available to demonstration plants with the aim of promoting technical breakthroughs within the area of environment and energy.*

The objective is to contribute to establish an internationally competitive Swedish industry within the emerging markets of environmental technology and systems for integrated production of energy and materials. Generally, it takes a long time to build demonstration plants. However, the decision to do so, as well as the construction process in itself, can have

an early positive impact on for example incentives, investment decisions and utilisation of competence. Thus, such investments can generate important competitiveness effects both in the short and in the long term. VINNOVA suggests that 1 billion SEK per year, during a period of ten years, is allocated by the state for demonstration plants within the areas of environment and energy technology. The focus should be to find radical new solutions that otherwise would not have come up in Sweden. Several public authorities, including VINNOVA and the Swedish Energy Agency, should finance the demonstration cooperatively.

- *Public procurement of innovation in areas such as environment, energy, health, security, IT and telecommunication should be stimulated. Special support measures should be set up to decrease the risks of individual public authorities, county councils and municipalities when participating in tendering procedures to purchase innovative solutions.* Earlier, VINNOVA has put together some proposals on how public demand can become a more powerful driver for innovation and industry competitiveness in several different contexts.⁵ We now propose a special measure to promote public procurement of innovation with focus on the environmental arena, at a cost of about 50 million SEK per year.⁶ Simultaneously, we suggest that a highly capitalised state fund is set up for the purpose of limiting risk exposure of individual public bodies in connection with public procurement of innovation. This is urgent, both from a public and an industrial point of view. The capital basis of such a fund should comprise 3 billion SEK at the least. In VINNOVA's opinion, a bigger fund of about 10 billion SEK would be a very powerful measure in the context. However, a fund with a lesser capital base would also contribute to a more powerful demand stimulus of environment and energy innovations.

Regional mobilisations of resources and actors for innovation and competitiveness

Sweden's regions will suffer due to the world-wide economic crisis, in various ways and with different severity. *Regional specialisation and a mobilisation of resources and actors are necessary measures in order to survive and prosper in the global competition.* During the economic crisis, the reason to try to achieve a mobilisation of resources and actors between different regions, industry and the state is even bigger than during more normal economic circumstances.

A central objective for VINNOVA's activities is to contribute to the development of internationally competitive environments for research and innovation. Regional mobilisations of resources and actors are fundamental in this. VINNOVA's activities are normally based on calls for proposals in national competition, and are not targeted towards individual regions. As the economic crisis spreads through the Swedish regions, competence and experiences from VINNOVA's activities can be used within the framework of regional strategies for renewal investments. When international and national economic performance starts to improve, such regional strategies will have laid down a foundation for sustainable growth.

Regional strategies should, to a significant extent, be aimed towards investments in innovation, to improve regional competitiveness on future growth markets. In that context, society and industry need to move in an environmentally friendly direction, in which renewable energy and low emission rates are basic requirements.

⁵ VINNOVA 2007, *Public procurement as a driver for innovation and change*, VP 2007:03.

⁶ Proposal submitted 2008-04-24 to the Ministry of Enterprise, Energy and Communications.

In the desired strategic mobilisations, it should be carefully considered to combine money from the European Regional Development Fund (ERDF) with regional means, extraordinary state investments and existing resources of public authorities. Such a mobilisation of resources would be used for investments in innovation with big potential. This would afford Sweden the possibility to come out of the economic crisis with a strengthened position. However, it requires that the financed activities and projects incorporate a clear and goal oriented innovation strategy.

The industrial structure differs between regions. Therefore, the impact of the economic crisis will vary according to region, as will the redundancies that follow in its wake. It is necessary to prioritise and mobilise resources and actors for future investments that are *special tailored for each region*. Careful consideration must be taken to a region's industry structure and its mix of concerned organisations. VINNOVA's VINNVÄXT programme (promoting regional growth through dynamic innovation systems) can be used to develop regional priorities and to mobilise resources and actors. It is important to utilise lessons and experiences that has been gained so far by VINNOVA and a number of regions in cooperation with other actors.

One part of such processes is to support the regions in developing strategy and action plans. They should be encouraged to include certain components that we know are important for success. The components are:

- Strong regional leadership
- Actors uniting round a vision for regional strengths by finding an area with growth potential
- Insight in the requirements for achieving international competitiveness within the areas
- Long-term and renewal oriented perspectives on international competitiveness
- A creditable joint action plan, with clear priorities to reach objectives
- Different actors dedicating substantial resources for long-term measures
- Strong commitment among the business community for action plan projects
- Strategies and resources for cooperation and learning among key actors
- Competent team of process leaders and facilitators to support cooperation and learning in the initiative

VINNOVA suggests that the government invest 200 million SEK per year during the next four years, to regional mobilisation of resources and actors to promote innovation and competitiveness. This should be initiated already in 2009, with an additional budgetary allocation about 50 million SEK per year. The ambition of such an extraordinary regional investment should be to achieve a mobilisation of resources and actors in the context of different regional innovation and competitiveness strategies. VINNOVA could coordinate the arrangements in collaboration with other relevant public and private organisations.

Internationalisation for economic growth and job creation in Sweden

Sweden's future has always built upon international cooperation and relationships, both on state level and between companies and individuals. Sweden also heavily depends on exports. Therefore, the growth of Sweden, to a very high extent, relies on growth in the surrounding world. Thus, it is vital for Sweden to be a part of innovation processes with a huge potential for development and growth in an international context. This includes developments in up and coming areas within research and business.

Globalisation poses both a challenge and a possibility, since research and innovation in a country no longer automatically leads to value creation or societal good in that country. VINNOVA has developed an international focus, with the overall objective to increase added value and societal good by striving for an optimal use of global knowledge resources. This will take place by assuring that Swedish innovations and research results reach international markets. Also, it is important to secure access to foreign knowledge resources for Swedish researchers and companies.

Special initiatives are required in order to strengthen Sweden's connection to the best research and innovation environments in the world, and to ascertain that Swedish companies are present on strategic important markets. Initiatives are needed that include international cooperation programmes for research and innovation, strategic alliances with prioritised countries and regions and targeted investments. Those initiatives will reinforce the internationalisation of Swedish skill-intensive (innovative) companies with special direction on strategic markets.

Sweden needs to attend and invest in international mobilisations of resources and actors. Important mobilisations are:

- BSR – Baltic Sea Region Cooperation. This will require approximately 200 million SEK a year from the Swedish state. Increased investments on Nordic-Baltic cooperation around the Baltic Sea constitute a big possibility in the current crisis, but require a mobilisation of resources and actors.
- Excellence in Research Initiative (Toppforskningsprogrammet) - a joint Nordic research programme with focus on the climate, the environment and the energy fields. The initiative was initiated by Nordic research ministers at a Nordic Council session. The initiative will require additional public investments if full potential is to be realised, especially in the context of European cooperation.
- Increased investments on raising the participation of Swedish actors in EU activities, with special focus on projects with big potential and synergies with other investments.
- Increased bilateral cooperation programmes for innovations with potential for long term sustainable growth and importance to society.
- The growth policy analysts (public servants formerly known as “technical attachés”) should constitute an important operative power for developing international cooperation initiatives. Today, this is only the case in a limited way. The analysts should be clearly linked to international strategies for innovation and research in Sweden and therefore, their organisation should be reorganised. VINNOVA is prepared to take on organisational responsibility for the analysts for reasons that are, to a certain extent, clarified below.

During 2008, VINNOVA prepared an international strategy with prioritisations and clear objectives for both European cooperation and cooperation with countries outside Europe. The strategy built on earlier international work, which had resulted in agreements and cooperation activities with a number of countries outside Europe. This means that VINNOVA does not only have specific tasks, aspirations and objectives for cooperation with Europe and EU programmes, but also aspirations, objectives and cooperation activities outside Europe, foremost in Asia and North America. South America and Africa have also been taken into consideration. VINNOVA therefore considers having good grounds to suggest above mentioned actions for future governmental investments.