



TransForum

Innovating Agriculture Through Co-creation

*Synopsis of a Six Year Innovation Program on
Sustainable Agriculture in The Netherlands*





Table of contents

1.	Management Summary	3
2.	The TransForum Program	4
2.1	Why was TransForum needed?	4
2.2	The organizational structure	5
2.3	The program	6
2.4	Public-private financing	7
3	The Vision: Metropolitan Agriculture	9
3.1	An expedition with a guiding question	9
3.2	Reconnecting city and agriculture: Metropolitan Agriculture	9
3.3	Creating a Field of Change	10
3.4	International perspective	11
4	Approach: Connected Value Development	12
4.1	Dealing with wicked problems	12
4.2	Six Guiding Principles	12
4.3	Connected Value Development	15
5	Infrastructure: Creating Innovation Space	16
5.1	The need for a space 'in the middle'	16
5.2.	Restrictions of incentive structures	16
5.2	Learning while doing	17
6	Outputs and Impacts	18
6.1	Practical Innovations: examples from the project portfolio	18
6.2	Transforming the innovation process	23
Appendix A:	Action Experiments supported by TransForum	24



*Innovating Agriculture
through Co-creation*

1. Management Summary

This document gives a synopsis of the Dutch Innovation Program 'TransForum' that ran from 2005 – 2010 and aimed to create a hands-on perspective for sustainable development of the Dutch agricultural sector.

Over that period TransForum invested 60 million euro's (50% funded by government, 50% matched by companies and other stakeholders) in over 100 projects. By involving key stakeholders in a large number of action experiments, TransForum was able to demonstrate tangible results by improving the People, Planet and Profit aspects of sustainable development.

Next to contributing to many innovations in the sector, TransForum was also innovative in its own right. Where other programs often focus on trying to implement scientific knowledge into business practices, TransForum focused on bringing multi-stakeholder coalitions together to jointly create innovations and the knowledge needed for them. Emphasizing the importance of organizing a collective innovation, TransForum also demonstrated that new modes of cooperation and co-creation are needed for the needed innovation to occur.

First, this document describes the organization and governance of the TransForum program. Then it illustrates how lessons were learned by actively engaging monitoring and reflection in the various projects how these lessons were used to

develop the vision Metropolitan Agriculture, the process of Connected Value Development and the idea of an Innovation Space as a an enabling environment to stimulate innovations. And finally the outcomes and impacts of the TransForum program are highlighted.

The key success factors of the TransForum program were:

- The creation of a temporary innovation space outside the regular institutional spheres and incentive structures to enable real innovation to occur;
- The use of monitoring and reflection to constantly learn and create and share new knowledge;
- The approach of connected value development to:
 - create value across all three elements of sustainability, people, planet and profit;
 - engage all relevant key stakeholders by using their different values as a basis to create new design principles and new business.

All results of the TransForum program are documented and available on the web (<http://www.transforum.nl/en/projects>).

2. The TransForum Program

2.1. Why was TransForum needed?

The Dutch agricultural sector was and still is performing at top-level. However, to maintain that position a continuous stream of innovations is necessary to deal with two important developments. First, a number of unstoppable global demographic trends cause a radical shift in the global marketplace for agricultural produce. Second, the optimized mode of agricultural production encounters a growing societal resistance based on perceived negative effects on the environment, social welfare and human health.

The global trends that need a response from the agricultural sector are (1) the continuous population growth, (2) the rising middle class, and (3) the increasing urbanization. Even if the world population will not grow toward the anticipated 9 billion people by 2050, we still will be witnessing a tremendous growth of the middle class. The OECD predicts an expansion of the 'global middle class' from 1.8 billion in 2009 to 3.2 billion by 2020 and even 4.9 billion by 2030. The bulk of this growth stems from Asia. The increased purchasing power of these masses will lead to a dramatic change in consumption, especially in the quality and composition of their food. A doubling of the demand for meat and fresh products will result. And this demand will be manifest within metropolitan regions, so within vast built-up areas. This calls for new modes of agricultural production that can deliver this demand at the locations where it is needed.

In the Netherlands these types of agricultural production have been developing over the last decades. Especially greenhouse horticulture and intensive livestock farming is taking place within urbanized regions and has the potential to deliver precisely the type of demand that the growing middle class is calling for. But in the development of these systems other values than productivity and economic return have been lost to sight. Intensive livestock farming has led to a public debate on animal welfare and the impervious international chain of production and processing combined with numerous food scandals has led to a growing unrest and distrust among consumers.

To provide an answer to these challenges, the notion of sustainable agriculture has been discussed for many years. In 2002 a group of people from Dutch agribusiness together with people from several universities came forward with the observation that discussing and researching the potential benefits of sustainable agriculture was not enough, but action was needed. Together with people from societal organizations and government they eventually formed the TransForum foundation as a vehicle to do just that: start working of new modes of agricultural production and processing that would reveal more sustainable pathways and demonstrate how existing and new knowledge can be utilized to discover these sustainable pathways.



Stop debating what sustainable development is, start experimenting to show how it can be done.

2.2. The organizational structure

TransForum was set up as a temporary innovation program that ran from 1 January 2005 until 31 December 2010. The foundation 'TransForum Agro&Groen' (the official Dutch name) was needed to execute the business plan that was developed earlier by representatives from the agribusiness, universities, societal organizations and governments.

TransForum was deliberately organized outside the regular institutional spheres to enable real innovation to occur. For the same reason the foundation had a limited lifespan, ensuring that all energy would be spent on executing the business plan and achieving the goals, without wasting energy on institutionalizing the entity itself.

A governance structure was developed to act as a safety net for the quality of the program. The formal governing bodies – the Board of Governors, the TransForum Advisory Board and the International Advisory Board – consisted of high-level representatives of TransForum's various stakeholders.

Board of Governors

The Board of Governors was the formal connection point of the foundation with its founding stakeholders. Therefore the Board was to disseminate the message and ideas developed within TransForum and maintaining the network to carry forward the innovation program. Part of that was also to ensure proper representation of TransForum in key external key organizations such as the Royal Netherlands Academy

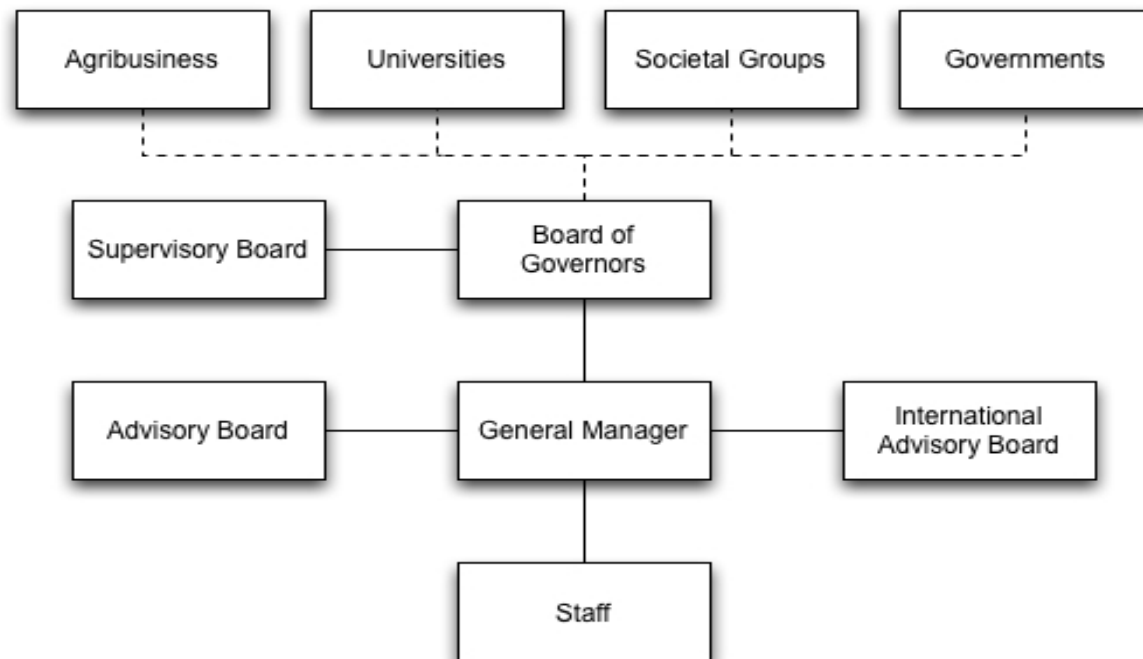


Figure 1. Governance structure of TransForum

TransForum was deliberately organized outside the regular institutional spheres to enable real innovation to occur

of Sciences and various Ministries. Internal governance issues that were the responsibility of the Board comprised amongst others the appointment of the General Manager, evaluation and approval of annual working plans, assessment and approval of different program elements and their associated budgets, and monitoring the overall progress of the TransForum program and where appropriate making adjustments.

Supervisory Board

The Supervisory Board supervised the effective and efficient realization of TransForum's end-result by the Board of Governors and the bureau, checked that the Board of Governors was performing its tasks properly and ensured that conflicts of interest were avoided. The Supervisory Board advised the Board of Governors on the basis of its own observations and assessed the nomination of new members to the Board of Governors.

Advisory Board

The TransForum Advisory Board helped shape the program and monitored the lessons learned so that after concluding the program TransForum was able to transfer a tangible legacy. In addition the TransForum Advisory Board shared responsibility for determining the extent to which TransForum has succeeded in linking up shareholders' implicit knowledge with the explicit scientific knowledge – one of the main objectives of the program.

International Advisory Board

The International Advisory Board advised the General Manager of on issues such as relevant experience with transition processes in the field of sustainable agriculture worldwide, well-founded visions and

opinions concerning overall trends in the field of sustainable agriculture, and innovative international concepts and technologies, etcetera, that can help promote more sustainable agriculture. They were also instrumental in identifying international publications and current research that contributes towards the body of knowledge required for TransForum's mission and in promoting cooperation between Dutch and foreign research institutes with a view to international knowledge development.

2.3. The program

The program that TransForum developed consisted of three interrelated parts, the Practice Program, the Scientific Program and the Learning Program.

Action experiments in the Practice Program

In the Practice Program a large number of hands-on innovation projects were supported. The initiatives for these projects stemmed from businesses or coalitions that had a business idea to innovate (parts of) their industry. TransForum was able to put in financial support to action experiments, provided that they would open up for monitoring, reflection and evaluation of the progress that was made. In this way, the Practice Program acted as the field laboratory of TransForum to develop and test the management of innovation processes in real life. Next to realizing actual innovations for sustainable agriculture, the other main question that was answered by the Practice Program was how to overcome obstacles that block sustainable development in agribusiness.



Action Experiments were aimed at creating value across all three elements of sustainability: People, Planet and Profit

Meaningful knowledge development in the Scientific Program

In the Scientific Program questions that emerged from the action experiments in the Practice Program, were used to develop a research agenda for scientific projects. The results of these projects had to be of direct public importance and hence be usable and applicable, preferably in the action experiments that TransForum was involved in. The Scientific Program was therefore intimately bound up with the world of practice. The main question that was answered by the Scientific Program was how to develop meaningful knowledge for innovation.

Monitoring and reflection in the Learning Program

The Learning Program was aimed at compiling the lessons learned from all the knowledge and experience that had been built up in both the Practice Program and the Scientific Program, and converting this into transferable forms. The learning took place at three levels: 1) within projects, 2) between projects, and 3) from projects. In the Learning Program monitoring and reflection was executed to enable learning at the three levels so as to render visible and transferable competencies and skills required for the realization of innovations. The main question that was answered by the Learning Program was how to become a learning organization.

Together these three elements formed the platform that was developed to realize the objectives of the program.

2.4. Public-private financing

The public-private ownership of the innovation program TransForum is also visible in the financing arrangements. When developing the business plan for TransForum all potential participants (for example businesses, farmers' organizations and NGO's) were asked to provide a letter of intent in which they stated how much funding they were willing to offer, provided that the national government would cover half of the needed budget. These letters added up to over € 20 million.

Based on this 'willingness to pay' the national government decided to support the program with € 30 million based on a specific scheme (Knowledge Infrastructure Investment Subsidies Decree). Under this scheme the national government was willing to provide 50% of the budget. This implied that during the execution of the program another € 30 million had to be drawn from other participants such as businesses, universities and others. Since the program was based on developing a portfolio of projects in the aforementioned three program elements, each project had to be funded for at least 50% by other stakeholders.

Monitor and reflect to make the learning explicit and stimulate the creation of new knowledge.

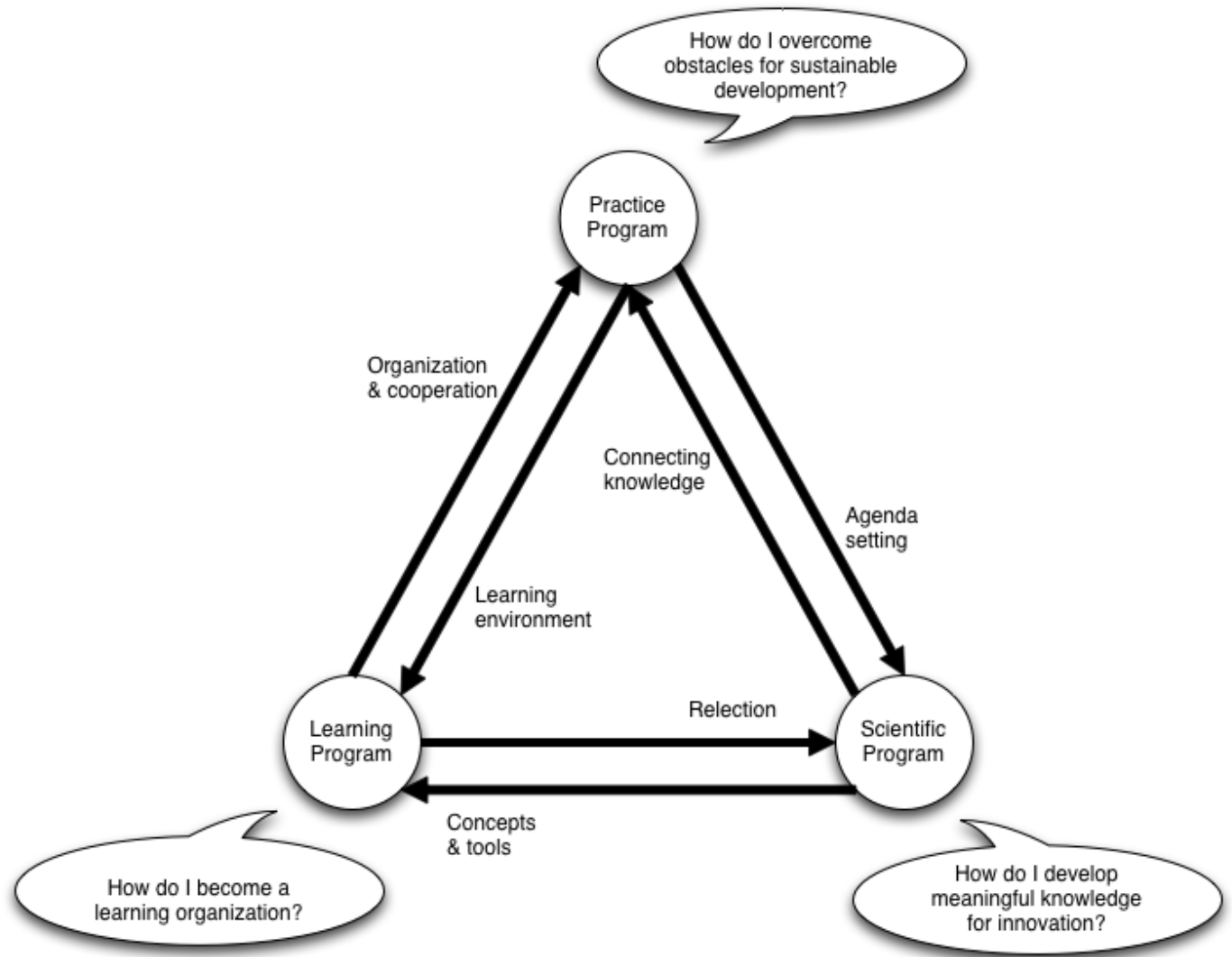


Figure 2. The three elements of the TransForum program, their interrelationships and objectives.

3. The Vision: Metropolitan Agriculture

3.1. An expedition with a guiding question

TransForum did not start out with a vision, let alone with a perceived solution. Instead TransForum started with a guiding question: 'How can Dutch agriculture become more sustainable?' *The invitation made to all the partners in the program was not to bring their best solutions, but to bring their best thinking and jointly create answers to the guiding question.* In the final years of the program TransForum used the learning of this expedition to identify the building blocks of the vision Metropolitan Agriculture. This vision is thus not designed or planned, but emerged from the action experiments and from the experience of all the stakeholders involved.

3.2. Reconnecting city and agriculture: Metropolitan Agriculture

The key finding in TransForum was that the most successful projects were those that really (re)connected agriculture and cities. In contrary to popular belief agriculture and cities are thus not antagonists, but great partners. They depend critically on one another: as supplier, customer, co-user of space and producer and processor of waste substances. Agriculture can make cities more sustainable and the metropolitan environment has a lot to offer to make agriculture more sustainable.

Since the needs and values of metropolitan consumers and citizen are widely diverse, metropolitan agriculture can also have various forms, including agro parks, care farming, urban farming, vertical farming and alternative forms of distribution. In all cases, the activities take place in a metropolitan environment, are explicitly concerned with the divergent needs of the urban population and make use of the typical urban characteristics of that environment. Within this broad framework, there is considerable potential to integrate agricultural activities with various aspects of metropolitan development, from the most obvious function of food production to more innovative work with recreation, health care, education, tourism, energy and waste management systems.

Metropolitan Agriculture is a pragmatic vision for a new agricultural logic. In this new logic agriculture no longer isolates itself, but makes optimal use of the strengths of the metropolitan environment (logistical nodes, networks, trend-setting consumers, a large and varied demand for food, organizational capacity, the flow of knowledge and concentrated purchasing power) and provides synergy among these strengths by applying the best available knowledge and know-how. In this way the agricultural production system is turned from a burden for the metropolitan environment into an engine of it and ensures that the growing demand for sufficient, safe, healthy, diversified and responsibly produced food can be met, in combination with the effective utilization of the landscape in the metropolitan areas.



Agriculture can make cities more sustainable and the metropolitan environment has a lot to offer to make agriculture more sustainable.

Metropolitan agriculture holds out an interesting prospect for all stakeholders. Agro-entrepreneurs strengthen their position by developing new business models based on sustainability and a variety of social values. Governments obtain space for the strengthened integration of agriculture and green spaces, while societal organizations are able to give meaningful expression to their values. Knowledge institutions make significant contributions to connecting the different values in new business propositions.

This implies that *the development of Metropolitan Agriculture depends on result driven cooperation between all stakeholders* (knowledge institutes, entrepreneurs, NGO's and societal organizations and governments). They can jointly create value(s) by

connecting up the People, Planet and Profits aspects of sustainable development. This allows the growing demand among consumers for sufficient, safe, healthy, diversified and responsibly produced food to be met, in combination with the high-quality, multifunctional use of metropolitan space.

3.3. Creating a Field of Change

In its projects TransForum learned that just having a vision, such as Metropolitan Agriculture, is not enough to create actual innovations. Having a suitable approach laid down in a process and creating enabling conditions by setting up the right infrastructure are equally critical for innovation to happen. With the right

Just having a vision is not enough; a suitable approach and creating an enabling infrastructure is equally critical for innovation to happen.

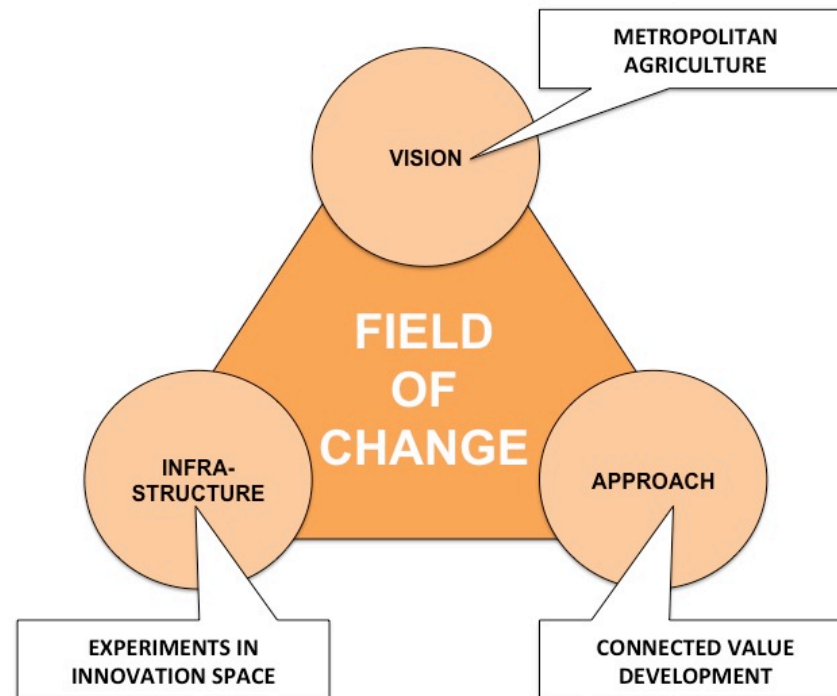


Figure 3. The Field of Change as proposed by Peter Senge that is spanned by vision, approach and infrastructure.

System Innovation is about changes in Software, Hardware and Orgware

combination of vision, process and infrastructure TransForum was able to create the necessary field of change. This field of change enabled stakeholders to create innovations in hardware (technologies, growing systems, products), but also in software (skills, competences, beliefs) and even in 'orgware' (modes of cooperation, partnerships, business models).

challenges. Projects in these countries illustrated that vision and approach can also be used in other regions and that it can well be adapted to the local situation. Based on these experiences the International Advisory Board of TransForum also invited TransForum to start organizing an international network on Metropolitan Agriculture.

3.4. International perspective

While the vision Metropolitan Agriculture emerged from practical innovation projects in the Netherlands, other metropolitan regions quickly embraced it. TransForum was invited by stakeholders in China and India to help them translate the vision to their specific context and

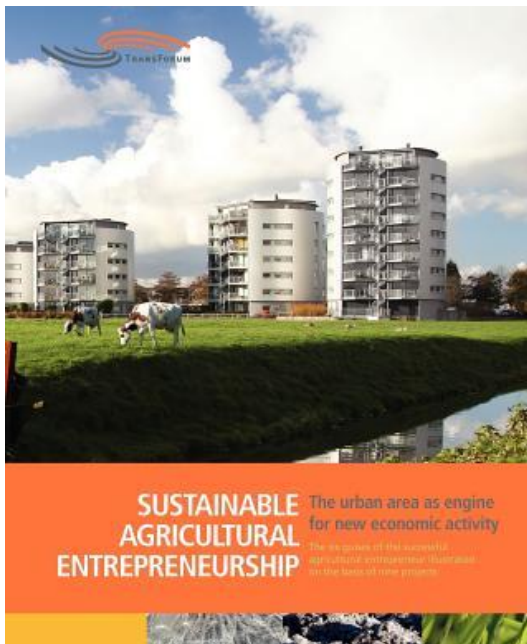
Further reading:

'Sustainable Agricultural Entrepreneurship; The six guises of the successful agricultural entrepreneur. The urban area as an engine for new economic activity'

authors: Anne-Claire van Altvorst, Karin Andeweg, Rik Eweg, Henk van Latesteijn, Sander Mager and Lia Spaans.

Published: 2011, TransForum

[Available via Amazon.com](#)



4. The Approach: Connected Value Development

We have to collectively learn our way to new solutions.

4.1. Dealing with wicked problems

If the long debate on sustainable development has taught us anything it is the so-called 'wicked nature' of the underlying problems. Many environmental, social and economic problems are highly complex and thus difficult to analyze and fully understand.

Moreover, because they are deeply embedded in our social, technical, and economic systems, this places heavy constraints on possible solutions. Even if a solution presents itself, it doubtless requires the actions of different actors with differing interests, views, and needs.

This not only makes any solution difficult to implement and manage, but also offers ample opportunity for endless loops, chicken-and-egg problems, and dead ends.

Also the challenges addressed in the TransForum action experiments were characterized as 'wicked problems' having a high dynamic complexity, a high social complexity and a high generative complexity.

A problem has a low dynamic complexity if cause and effect are close together in space and time. These problems can be dealt with piece by piece, dismantled into easily resolvable components. By contrast, a problem has high dynamic complexity when cause and effect are far apart in space and time, requiring a systemic approach.

Social complexity involves the understandings and the mental models of the people involved. A problem has a low social complexity if people share common assumptions, values and objectives regarding the problem. In such cases, authority and expertise can resolve the problem. A problem has a high social complexity when people's perception on cause and possible solution differ considerably. These issues can only be addressed by involving all the relevant stakeholders themselves.

Generative complexity arises when the problem is highly unpredictable and unfamiliar. In wicked problems all three types of complexity are present, implying that they are call for a systemic approach, involving all stakeholders and avoid applying best practices from the past but learn the way to deal with the problem while trying to collectively resolve the problem.

4.2. Six Guiding Principles

To ignite creativity and to do justice to the wicked character of the challenges of sustainable development, TransForum did not work with a strict set of criteria. Instead it used a set of guiding principles, which provided a framework that was used to shape all action experiments it supported.



Sustainable Development is not a matter of implementing new technologies, but a complex challenge of social learning and system change.

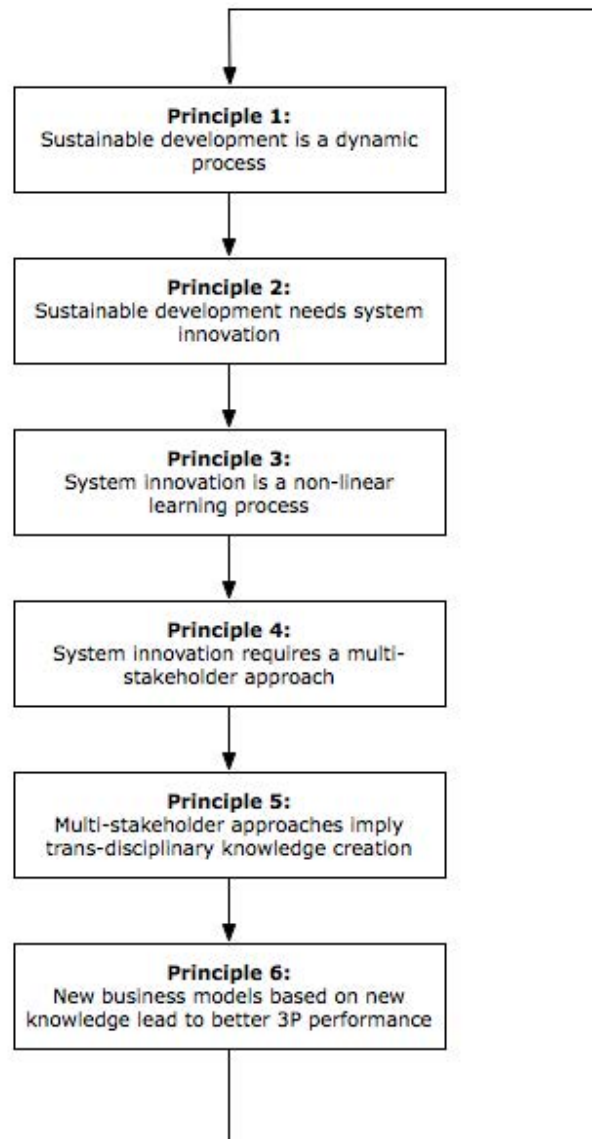


Figure 4. The six guiding principles that together constitute the TransForum Model framework

The following guiding principles were used:

1. Sustainable development is a dynamic process.

No closed form definition exists for the concept of sustainable agriculture. It must be given realizable meaning by developing value along the three dimensions that constitute sustainable development (People, Planet and Profit) over time. Hence, setting the ambition in a project is not just a matter of implementing norms, standards or definitions, but of participative deliberation of stakeholders that will lead to a result that is recognized as a positive contribution to People, Planet and Profit.

2. Sustainable development needs system innovation.

More of the same is simply not enough. The hardware (technology), software (knowledge, competence and skills), and orgware (business models, modes of cooperation) of agriculture must be innovated if movement toward sustainability is to be achieved. It is not a matter of implementing new technologies but a complex challenge of social learning and system change.

The innovation realized in the TransForum projects added value for each of the participants and the organizations they represent. At a deeper level, the co-creation process in the projects evoked system innovation: the changing of deeply rooted patterns of doing and thinking, and with it the grinding structures that we have built around these patterns.

3. System innovation is a non-linear learning process.

Every wicked problem addressed in the TransForum action experiments process was different, encountered

KENGi partnerships, which stands for Knowledge institutes, Entrepreneurs, Non-governmental and Governmental institutions, with the 'i' for their joint objective of innovation.

different obstacles and required different actors collaborating. The normal scientific approach of problem-solution-application thus had to give way to a messier process of consensus goal setting-joint knowledge creation-reflexive learning. This led to an iterative process with many feedback loops and an often unpredictable trajectory.

As with any expedition, most of the learning occurs while traveling, not when arriving at your destination. Thus the TransForum model is based on interactivity, dialogue and participation. TransForum used cyclic, reflexive, action-learning methods in which stakeholders interacted anytime, anywhere.

4. System innovation requires a multi-stakeholder approach.

Turning today's highly complex challenges in the field of sustainable development into 'win-win-win-situations' (good for people, planet, and profit) demands new ways of doing business, of governing and of performing scientific research. This transformation implied by sustainable development requires close collaboration between scientists, policy makers, entrepreneurs, NGOs, citizens, and consumers, all willing to learn and build knowledge together in an interactive process.

To indicate such partnerships TransForum used the term KENGi, which stands for Knowledge institutes, Entrepreneurs, Non-governmental and Governmental institutions, with the 'i' for their joint objective of innovation. All stakeholders bring existing knowledge and concern to the process, and their collective presence is needed for legitimacy and productive creativity.

5. Multi-stakeholder approaches imply trans-disciplinary knowledge creation.

The action experiments required a different form of knowledge development, in which the perspectives of different actors were integrated in the identification, formulation and resolution of problems. Issues are therefore not formulated from the viewpoint of a scientific discipline, and assessed by other researchers ('peer review') using disciplinary scientific criteria. In trans-disciplinary knowledge creation, the issues, and therefore the required expertise, are formulated from the context of the problem. Different societal actors, including scientists, search in a joint deliberative process to clarify the problem and find possible solutions. In this action-learning process, new knowledge is generated through mutual exchange. The different perspectives on the issue are integrated in a collective learning process, whereby in the course of the interaction new knowledge is construed, shared and tested.

6. New business models based on new knowledge lead to better 3P performance of agriculture

All TransForum projects were about linking environmental and societal challenges to business opportunities by bringing different people together in a process of value co-creation. Entrepreneurs that manage to successfully connect a business agenda with a societal and/or environmental challenge acquire a 'license to grow'. This is not a literal or tangible license, and no single individual or institution can award it. Rather, the license results from incorporating different societal and ecological values into the primary process of a business, which in turn results in new

Connected Value Development aims to make the 'people' and 'planet' values an intrinsic part of the business model.

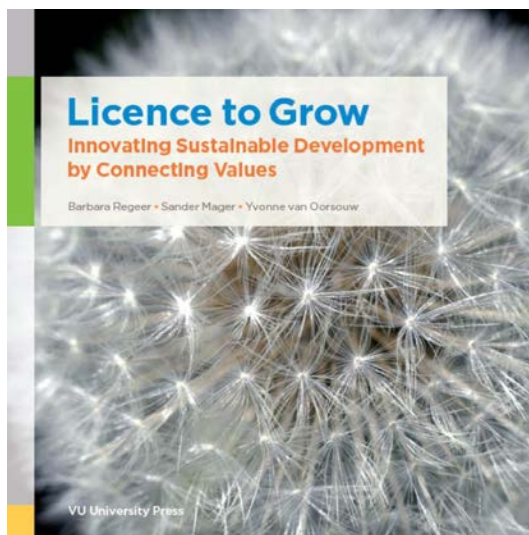
values for society, in terms of the effects of the products and services created on issues such as equity, participation, health, and the environment. The essential elements in the new business models are the inclusion of people and planet aspects next to the regular profit aspects in a transparent and accountable way. So, from the business model it must be clear what the contribution to these three domains will be. And by presenting them in a transparent and accountable way, the implementation of the innovation can be truly assessed on its performance.

4.3 Connected Value Development

Essential in TransForum's approach is to postpone the urge to come up with a 'solution'. Instead, focus on what constitutes the common challenge and how this challenge is related to the different underlying values of the relevant stakeholders. Then actively build a coalition to co-create new business models. In many cases this coalition will encompass some 'unlikely allies'- for example former adversaries - that have proven to be critical in coming up with new design criteria leading to innovative business ideas.

Through dialogue between stakeholders a new cooperation model for business development emerged, one based on interaction, collaboration, and co-creation. Importantly, the actors engage in dialogue, rather than attempting to convince each other. Companies can view other actors as potential allies and sources of solutions, not as adversaries or risk factors for their new plans, and their financial perspective on sustainable development will change, from one of 'expenses' to a view of 'investments for business opportunities'.

This Connected Value Development approach developed by TransForum aims to organize processes that result in added value for business and wider society alike. Connected Value Development is an approach that transforms perceived trade-offs into complements, by connecting values held by different stakeholders. The Connected Value Development leads to the creation of "3-P business propositions", that is: economic activities which, of course, return a Profit but are, at the same time, good for People and fully respectful of our Planet. In contrast to many other approaches Connected Value Development seeks to make the 'people' and 'planet' values an intrinsic part of the business model.



Further reading:

'Licence to Grow – innovating Sustainable Development by Connecting Values'

authors: Barbara Regeer, Sander Mager and Yvonne van Oorschot.

Published: 2011, VU University Press

[Available via Amazon.com](#)

Standard approaches to research, education, policy making, social activism and business development are not well equipped to deal with real life complexity



5. Infrastructure: Creating Innovation Space

5.1. The need for a space 'in the middle'

The challenges TransForum faced in its projects, were highly complex and thus difficult to analyze and fully understand. Moreover, the needed transformations to address the challenges would need to have an impact on deeply embedded social, technical, and economic aspects of our daily lives and routines. TransForum experienced that the standard approaches to research, education, policy making, social activism and business development are not well equipped to deal with this real life complexity.

What was needed is the acknowledgement that each stakeholder alone cannot create these innovations alone, and that existing institutions do not offer the right conditions to support these innovations. There was a clear need for a new space 'in the middle' that created new opportunities: opportunities for new connections, new ways of creating knowledge, and new types of business. A space where the traditional dividing lines between business, policy, society, and science became blurred, as did the dividing lines between consumers and citizens, or between making profit and adding value to society.

5.2. Restrictions of incentive structures

In the first year of TransForum the existing incentive structures within the different stakeholder groups often

resisted the change that TransForum was trying to establish. TransForum needed to have room to truly experiment. Therefore TransForum started to develop into an 'innovation space' that was free from the rules of each supporting organizations, fully enabling the needed creativity and cooperation. In this innovation space stakeholders were not being held accountable to the traditional norms, rules and regulation of their own institution or organization.

Since TransForum brought together different stakeholders in a space between organizations, there were no set rules or procedures that make it obvious what it is one has to do, which road to follow, and how to behave. Different stakeholders have differing perceptions of what the problem, the outcome, and the output are or should be. Most importantly, though, the set of rules of your own organization cannot be applied one-on-one in this open space.

Boundaries of this process are never fully clear, neither are consecutive process steps, and decision making moments are not to be outlined in advance. Even the question of who is in and who is out during the process cannot be clear from the outset, nor can deliverables and outcomes be described precisely upfront. Planning, decision-making, content, and involving other actors intertwine in multiple ways. As a result of this, many participants in TransForum projects preferred to refer to them as processes instead of projects.

*Make the emerging context
part of your process*

5.3. Learning while doing

When starting a TransForum project it was important to acknowledge the default tendency of most stakeholders to define the project boundaries and anticipated output. Doing the same when starting a Connected Value Development process is failing to realize that one automatically creates a single direction and a path, blocking the opportunity to make the emerging context an integral part of the process.

Starting to see the difference between this default tendency of defining a project and dealing with an emerging process, is an example of what Otto Scharmer pinpoints in Theory U as *“without a direct link to the context of a situation, we cannot learn to see. But it is only in the suspension of judgment that we can open ourselves up to wonder.”*

In an open innovation space there are no upfront set rules and routines like those that exist in the context of regular organizations. These natural qualities of the open innovation space, where nothing is quite set yet, make it the right environment in which new connections will be made and new ideas can develop. However, since many people are so used to working within boundaries, the creation and enhancement of such an environment – the innovation space – is a continuous task and constitutes part of the learning-by-doing process itself. So not only the participants in the TransForum projects learned while doing, TransForum itself did the same.

Further reading:

‘The TransForum Model: Transforming Agro Innovation Toward Sustainable Development’

editors: Henk van Latesteijn and Karin Andeweg

Published: 2011, Springer

[Available via Amazon.com](#)



'TransForum has provided seeds for valorization in more than 100 projects'

6. Outputs and Impacts

6.1. Practical Innovations: examples from the project portfolio

In its six-year lifespan TransForum was involved or initiated in total almost 100 different projects. Through these projects innovations have been realized that are now used in every day practice. Innovations that show how economic gains can go together with social and environmental gains. The results of these projects are captured in hundreds of publications, books, networks and courses. This legacy forms the basis for a further development of the transition toward a more sustainable agricultural sector worldwide.

The results of 33 action experiments that TransForum helped to realize, illustrate that the urbanized environment offers great opportunities for a more sustainable development of agriculture. The reconnection between the metropolitan region and agriculture leads to a wide range of new modes of agricultural production collectively denoted as metropolitan agriculture. A list and short description of these 33 action experiments is given in Appendix A.

Three different strategies for the realization of new modes of sustainable production can be discerned within the realm of metropolitan agriculture:

1. sustainable intensification,
2. sustainable valorization, and
3. sustainable diversification.

Sustainable intensification

For reasons of food security, reliability, public health and certainly also animal welfare, food will preferably be produced close to cities. The growing world population and rising global living standards mean that even more food will inevitably be required in the future. This calls for both an efficient and a more sustainable method of production in order to generate public acceptance and appreciation. This leads to a strategy of sustainable intensification, where sustainability is the driver for scaling up and intensifying, not mere cost-price reduction.

Sustainable valorization

The current trends in the agricultural sector are the dominance of retailers, the increases in scale in agriculture, the narrowing of the fresh produce range (with fewer specialties and the focus on commodities) and price as the leading mechanism for remunerating producers. In this system of fierce price competition, quality and sustainability barely manage to get a look-in. By stimulating cooperation with new chain partners to open up exiting markets a new positioning opportunity arises, whereby sustainability is a win-win situation instead of an additional cost factor. This calls for the development of new, sustainable chains under the strategy of sustainable valorization.



The reconnection between the metropolitan region and agriculture leads to a wide range of new sustainable modes of agricultural production

Sustainable diversification

Successful agricultural entrepreneurs manage to deliver added value in new areas of activity other than traditional agricultural products and services. Care farming, for example, concentrates on the need for peace and quiet, spaciousness and greenery. The innovative entrepreneur is able to capture a position in new markets by bringing about the cross-fertilization of various sectors and the development of relevant products and services. This may involve cooperation with, in some cases, totally new partners leading to a strategy of sustainable diversification.

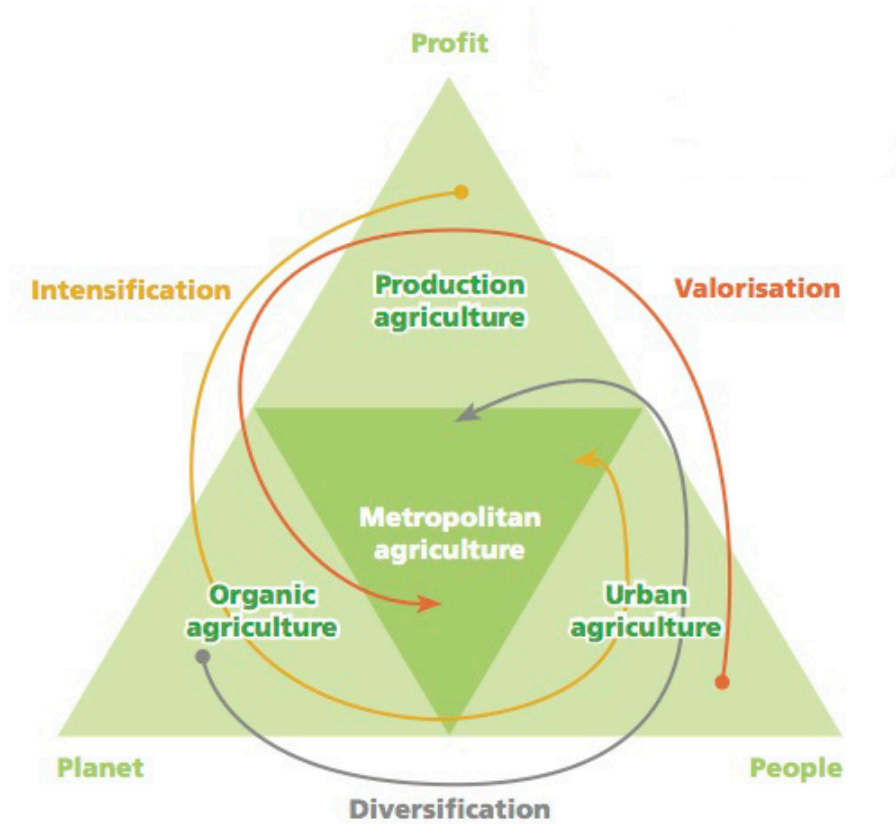


Figure 5. Metropolitan agriculture originates by connecting the three corners of more traditional forms of agriculture using one of the three value-adding perspectives.

BOX 1
NEW MIXED FARM

Example of Sustainable Intensification



New Mixed Farm

Sustainability gains by the closing and linking up of various loops.

+ The advantages

Poultry farm with slaughterhouse

The loop is fully closed; literally from egg to chicken fillet in the one business location.

broilers 1,059,840
slaughter breed parent animals 74,448

Bio-energy plant

The plant produces compost, fertiliser, heat, CO₂, electricity, biogas and clean water.

Closed pig farm

A loop from the breeding of pigs to meat production in the one location.

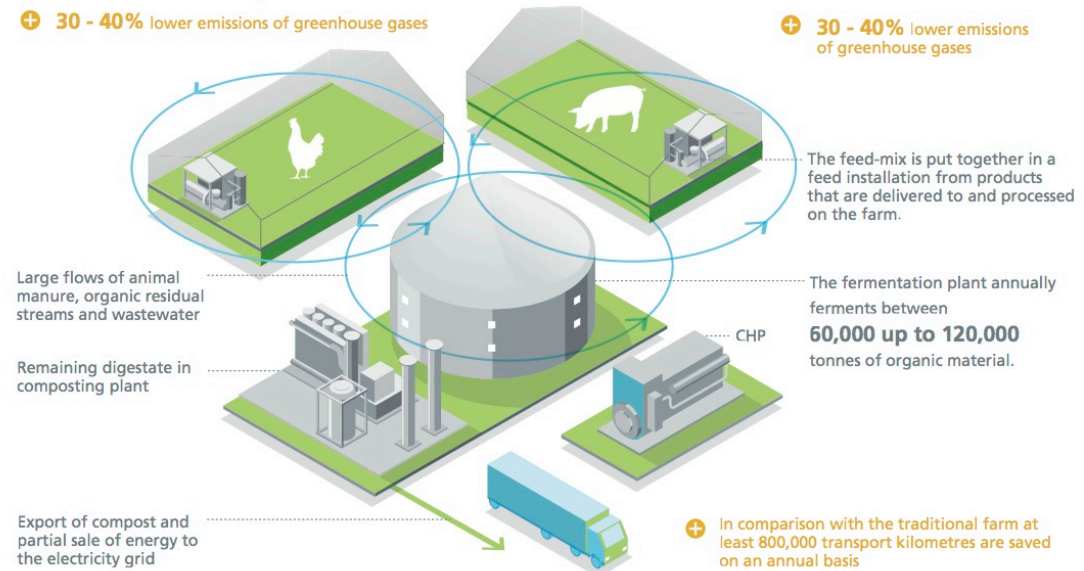
finishing pigs 20,580
weaned piglets 10,836
pregnant sows 2,272
other 1,549



- +** 7% reduction in poultry-keeping costs
- +** Lower animal transport means less stress and improved animal welfare
- +** 60 - 80% lower consumption of fossil fuels
- +** 30 - 40% lower emissions of greenhouse gases

- +** 60 - 85% of the required energy is utilised in the form of renewable energy

- +** Lower animal transport means less stress and improved animal welfare
- +** 60 - 80% lower consumption of fossil fuels
- +** 30 - 40% lower emissions of greenhouse gases



The mixed farm is the most classical form of farming. Arable farming, horticulture, beef cattle and dairy cattle were all combined. Waste was composted, and if necessary the entire family could enjoy the warmth from the cowshed. Three leading Dutch entrepreneurs took up the challenge to scale up this highly sustainable form of agriculture and dress it up in a modern jacket under the heading New Mixed Farm. This would no longer mean a single mixed farm but large, specialized businesses making use of each other's waste and residual streams – all this made possible by the large scale of the collaborating businesses, and creating the potential for substantial sustainability gains.

BOX 2 RONDEEL

Example of Sustainable Valorization



Rondeel

Rondeel is genuinely distinctive as it is an integrated, sustainable chicken shed. Every detail has been taken into account. The result has been a positive shift in favour of animal-friendly eggs in Dutch supermarkets.

+ The advantages

Poultry-farmer

Rondeel BV amounts to a unique relationship between supplier of housing systems and poultry farmer. The chickens occupy a pleasant and spacious shed.

Retail

A contract with the supermarket chain Albert Heijn guarantees the sale of Rondeel eggs.

Consumer

On offer is an egg that has been produced sustainably and under good animal welfare conditions.



+ Blends in with the landscape

+ Agreements about new division of the margin

+ 3 stars from Animal Protection Foundation & Milieukeur eco-label

+ Animal welfare & animal health

+ Farmer able to invest in sustainability

+ Room for natural animal behavior

+ Minimal emissions & energy consumption

+ Consumers are able to visit the Rondeel

+ Environmentally-friendly packaging

Layout

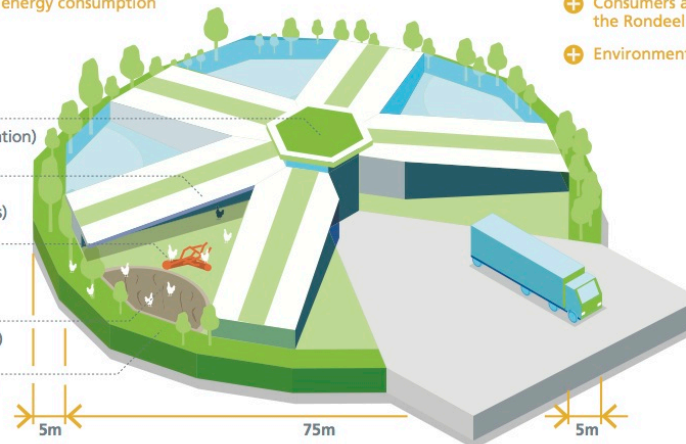
Central Core
(air extraction and ventilation)

Night quarters
(sleeping, feeding, drinking and laying eggs)

Daytime quarters
(scratching, resting, playing and hiding)

Dust bath
(scratching and scraping)

Wooded fringe
(hiding and scratching)

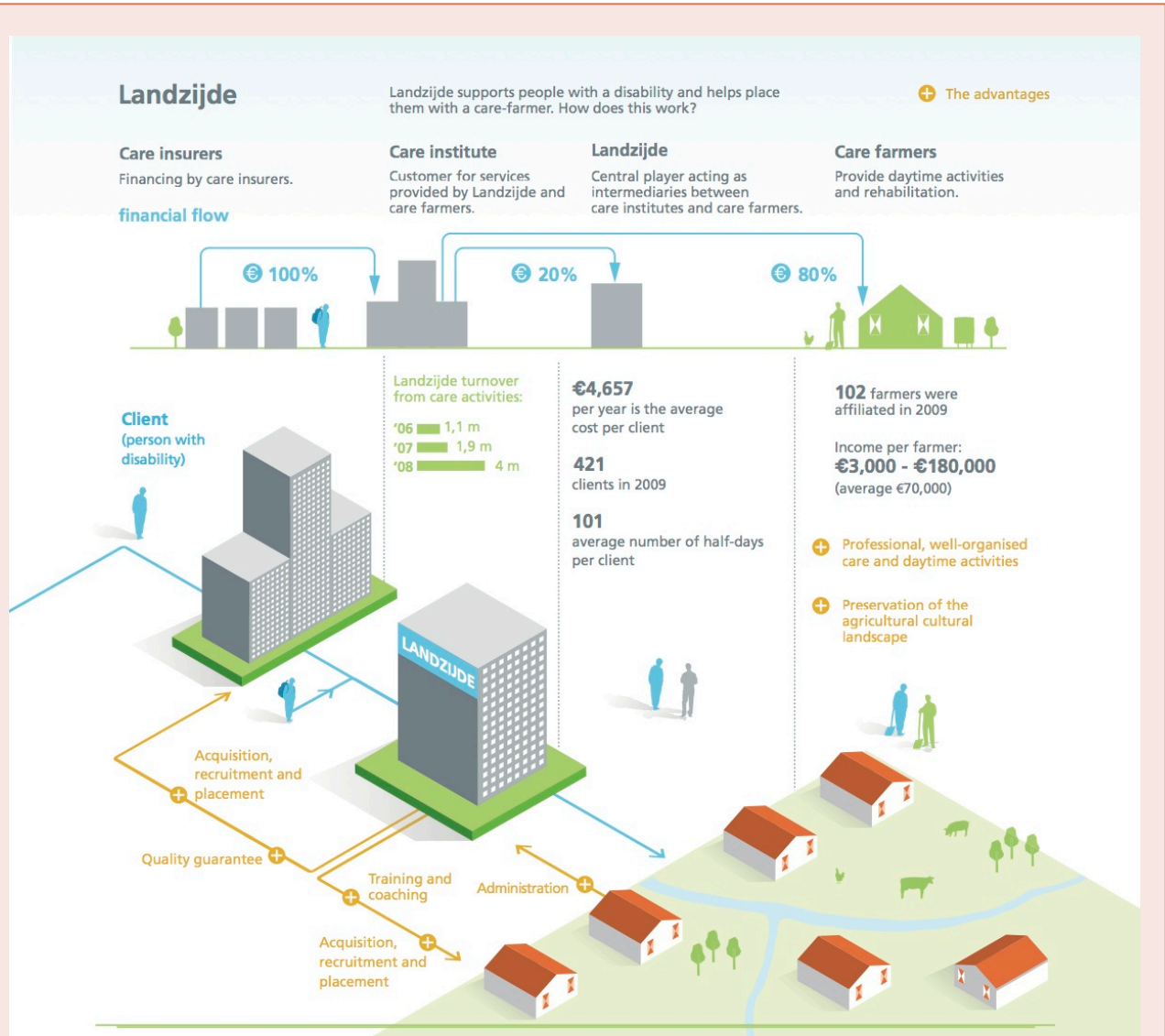


	Shed size (building)	Free range area	Sales breakdown of Dutch eggs
BARN	1,667 m ²	0 m ²	84%
FREE RANGE	1,667 m ²	75,000 m ²	3,3%
ORGANIC	2,500 m ²	120,000 m ²	1,9%
RONDEEL	4,400 m ²	5,700 m ² (incl. wooded fringe)	0,08%

One of the examples repeatedly cited by opponents of the bio-industry concerns the conditions in which chickens are kept. Partly on account of TransForum's input a team was set up consisting of technicians, scientists and people who knew about marketing and brand- building and combined them with animal rights supporters and the leading supermarket chain in the Netherlands. Together they managed to come up with a henhouse that might have been designed by the chickens themselves and gained public appreciation for the eggs that were produced at a price point that would enable the farmer to make a decent living.

BOX 3
LANDZIJDE / GREEN CARE

Example of Sustainable Diversification



Farmers can help homeless, rehabilitating drug addicts and people suffering from burnout by providing them a structure, peace and quiet, space and meaningful work on the farm: 'green care'. By providing these services to the city, the cooperative Landzijde was looking to generate extra income and at the same time preserving farmers and the typical agricultural landscape for the city. TransForum helped speeding up the development by putting the farmers in touch with psychiatrists, the Health Council and care and welfare institutions. Although this initiative has a high 'cuddliness factor' (meaning that it's really impossible to be against it) and therefore received a lot of political support, bureaucracy and regulation were the biggest hurdles. Taking these down took some effort, but Landzijde is now up and running.

5.2. Transforming the innovation process

At a more general level the outcome of the TransForum program is more difficult to measure exactly. The minister of Economic Affairs, Agriculture and Innovation used the following wording to describe the relevance of TransForum in his letter to formalize the closure of the program:

'TransForum has made an important contribution to a new perspective for Dutch agriculture in which sustainable development is paramount. By providing funds and knowledge TransForum has accomplished dozens of projects. Through the approach of 'connected value development' TransForum has gathered the different stakes and underlying values of businesses, civil society organizations, knowledge institutions and governments. You have provided solid scientific evidence for this approach. Furthermore you have executed a large number of valorization activities.'

In the appraisal report of TransForum by the special government committee that evaluated the impact of the Knowledge Infrastructure Investment Subsidies Decree, the scheme under which TransForum was supported, we can read the following:

'TransForum has provided seeds for valorization in more than 100 projects. In twelve collaborations actual investments are realized. The Ministry of Economic Affairs, Agriculture and Innovation has used the TransForum approach in developing its innovation policy for the agricultural sector.'

These quotes reveal that there has been an impact of TransForum on further innovation in the Dutch agricultural sector. Putting numbers to that impact is difficult. If we look at the twelve projects that had indeed led to investments at the time the TransForum stopped, the total number already added up to some € 500 million. Some of these numbers are still rough estimates of what the total investments will be during the development of the projects. And of course, when the time lag between the original TransForum project that developed the seed and the actual investment that will lead to value capturing increases, there will be an increasing number of additional incentives that will play a part.

Still, the impact of TransForum activities can be seen both at the individual project level and at the level of innovation policy and implementation. The so-called Top sector Policy that was developed during the last two years aims at enforcing already strong economic sectors by stimulating innovation through co-operation and co-creation. The fundamentals of that approach were experienced by a large number of participants during the six years of TransForum.



'The Ministry of Economic Affairs, Agriculture and Innovation has used the TransForum approach in developing its innovation policy for the agricultural sector'

Appendix A.

Action Experiments supported by TransForum

1: Accessibility of Mainport Aalsmeer

Forming a local coalition to address the challenge of increased road traffic resulting from the expanding flower auction.

2: Agropark Flevoland

Assessing feasibility of an integrated agro-production facility using excess heat from a power station and local expertise in dairy, horticulture and arable farming.

3: Biopark Terneuzen

Developing an integrated agro park combining residual heat and CO2 from chemical industry with greenhouse horticulture.

4: More about Food

Web-based information database to test whether providing information about sustainability performance of food increases knowledge and consumption.

5: Calendula

Developing an international production and processing chain of oil extracted from the marigold flower (Calendula) oil to provide natural paint thinner.

6: Cradle-to-cradle and Logistics

Assessing the feasibility of a closed loop supply system for packaging materials in food products, by redesigning materials, processing steps, organization and communication.

7: Dairy Adventure

Co-creating a large-scale dairy operation or 'Community' that deals with all Triple-P aspects.

8: DRIVE

Developing a quality control system for pig meat to arrive at price differentiation based on sustainability performance.

9: Flor-i-Log

Linking expert knowledge from researchers and practical insights from entrepreneurs to improve the logistical organization and execution in the export-oriented ornamental plants business.

10: Freshpark VENLog

Exploring and experimenting with the international orientation of a regional 'Freshpark' (a former vegetables auction) and assessing its potential by using information from all stakeholders.

11: Green and the City

Exploration of prospects for extensive forms of metropolitan agriculture in the most urbanized area in the Netherlands by creating new connections between the city and the countryside.

12: Green Care Amsterdam / Landzijde

Co-creating a professional organization of 200 small farmers that delivers competitive healthcare arrangements: Green Care.

13: Greenport Betuwse Bloem

Improving collaboration between five horticulture regions in the NL by co-creating new combined business plans and demonstrate mutual benefits.

14: Greenport Shanghai

Developing a master plan for a modern high-tech intensive and sustainable agropark in Shanghai involving Dutch and Chinese entrepreneurs.

15: Green Valley

Counterbalancing the development of regional food industries (Food Valley) by collaboration of nature and landscape organizations and local governments.

16: Healthy Pip Fruit Chain

Collective effort to improve pip fruit varieties using cisgenic techniques leading to new tasty apples and pears that are intrinsically resistant to diseases.

17: Healthy Oats

Developing a glut-free production, processing and supply chain of oats to produce healthy products for coeliac disease patients.

18: International Livestock Farming Orchestration Role

Supporting the emergence of a strategic alliance between partners from the pig producing chain that collectively address the challenge of adding value to the international pig industry.

19: LandMarkt

Enabling the development of a new retail formula based on the idea of a covered farmers market as a metropolitan meeting place and enhancing the contact between producers and consumers.

20: Mainport – Greenport

Exploration of forms of sustainable metropolitan agriculture in the most urbanized part of the Netherlands by connecting the Mainport (Rotterdam) to the Greenport (the greenhouse region).

21: New markets and vital coalitions Heuvelland

Combined effort of various stakeholder groups to brand the Heuvelland region and thus creating new opportunities for the dwindling agricultural sector by introducing new products and markets.

22: New Mixed Farm

Integrating existing separated agricultural enterprises into a new mode of the classic mixed farm concept, leading to sustainable intensification of production and lowering the waste streams.

23: Northern Frisian Woods

Bringing together 750 small farmers to collectively develop new product-market combinations that make use of the unique characteristics of the region and the local culture.

24: Regional Food Chain

Stimulate the cooperation between producers and retail by combining a producers collective with a new retail formula in which the producers own the products until it passes the cash register.

25: Saline Agriculture

Experiment with the production, processing and sale of salt-tolerant crops to prepare for a further salinization of the Dutch coastal production areas.

26: Saline Experimental Garden

Creation of an experimental garden on the island of Texel to show the potential of saline agriculture and presenting to the larger public that this potential is tangible.

27: Special education on the farm

Stimulating the cooperation between education and farming around the urbanized areas by providing education for slightly handicapped pupils and slow learners that need special attention.

28: Streamlining Greenport Venlo

Enabling regional learning network that connects entrepreneurs, local governments, research institutes, education and social organizations leading to regional awareness and new initiatives.

29: Sustainability in retailing

Promoting the collaboration of a major supermarket chain with societal organizations to develop a more sustainable regular supply chain by introducing sustainable purchasing requirements.

30: Synergy

Enabling a learning network of pioneers in the greenhouse sector that are experimenting with new energy producing closed systems so the technical invention will lead a real applicable innovation.

31: The Quest for the Golden Egg

Co-creating a new brand (Rondeel) for the production and marketing of eggs by developing a new henhouse, new packaging, new supply channels and a new contractual agreement with retail.

32: The Sjalon

Helping traditional arable farmers to set up a collaborative corporate structure that enables differentiation of labor and attaining a scale that opens up new production potentials.

33: Water self-sufficient agriculture

Developing a new concept in which farmers produce fresh and clean water by storing and cleaning rain and surface water using adapted agricultural techniques and selling the product to consumers.



© 2013

Value Mediation Partners BV

P.O. Box 8049, 3009 AA Rotterdam, Netherlands

E-mail: info@valuemediation.nl

Internet: www.valuemediation.nl



This work is licensed under the Creative Commons Attribution-NonCommercial 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.



This publication was funded by
Stichting Metropolitane Landbouw
(Foundation Metropolitan Agriculture)

www.metropolitanelandbouw.nl