Searching for institutional renewal for a sustainable regional agricultural system

About the organized perpetuation of problems

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Foreword

When people start looking for radical innovations, they are usually driven by the conviction that the traditional ways will no longer do. This often occurs when persisting problems can no longer be resolved with the customary interventions. Fundamental change is then perceived to be imperative. A similar conviction gave rise to the ambition to design and implement a new sustainable regional agricultural system.

Not everyone agrees with this ambition. Far from viewing agricultural regionalization as a viable solution, proponents of globalization see it as a step backwards. They argue that the forces of globalization are irreversible, and can only be temporarily tempered, but never stopped. Which is just as well, they add, because globalization has too many obvious advantages to offer.

Agriculture is a typical example of a sector whose development is dominated by the effects of globalization. Both food chains and markets increasingly operate on a global scale. And agricultural producers must hold their own against competitors on other continents. But not everyone is jumping on the global bandwagon. Dissenting noises can also be heard. Globalization has attracted growing criticism in recent years, also in the agriculture sector. One issue is food safety, which is difficult to guarantee in global food chains. Another concerns the fact that conditions in many regions do not favour further rationalization. Demands to preserve small-scale regional countryside, for instance, are at odds with the further rationalization of food production. And the more account you need to take of society’s demands in terms of nature, countryside and animal welfare, the less able you are to compete with producers elsewhere in the world. However, if you give the market free rein, regions will increasingly be planned to accommodate large-scale agriculture. Regional identity will suffer, and the countryside will become increasingly bland and uniform. Another practical argument against large-scale agriculture in the Netherlands is that high land prices make it hard, if not impossible, to compete with producers in more generously spaced countries.

All in all, the agricultural function looks set to come under pressure in the Netherlands – and this is sure to have radical and far-reaching consequences. Because the disappearance of regional agriculture will not only lead to a loss of rational food production, but will also affect the vital role that farmers play in managing the countryside as well as in fulfilling emerging functions, such as running special needs farms for people with developmental disabilities.
These new insights have galvanized a worldwide counter-movement against globalization in almost all areas, including agriculture. Regionalization and small-scale development are touted as viable alternatives for globalization and economies of scale. Many authors and speakers have condemned the evils of globalization while trumpeting the virtues of regionalization in publications and speeches. But little concrete action has been taken so far. There have been some regional initiatives, but most are limited in scale and confined to food chains (e.g. production and marketing of regional produce). As yet, there have been no steps to create an overall master plan for a sustainable regional agricultural system.

InnovationNetwork was created to develop ground-breaking concepts and initiate transitions to new systems. The development and elaboration of a sustainable regional agriculture model certainly fits that brief. The challenge is not to look for improvements within existing regional initiatives, but to design a whole new alternative system. The basic assumption is that systemic changes are required to enable the development of regional systems. In this sense, regional agriculture is no different from global agriculture. We should emphasize, therefore, that our ambition is not to develop regional agriculture in opposition to global agriculture. Regional and global systems both have great advantages, and we are convinced that the two can co-exist and complement each other. This approach of harmonious co-existence also fits in well with the mission entrusted to InnovationNetwork.

If you are interested in getting involved in this regionalization project, you are cordially invited to get in touch with us. As a networking organization, we welcome input from all sides. The contact person for this project is Mathieu Wagemans.

Dr G. Vos,
Director of InnovationNetwork
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Summary

A regional agricultural system calls for different organizational forms, a different control structure and different finance forms than a globalized agricultural system. That is the basic premise of this essay that sets out to identify systemic errors and possible routes towards solutions for achieving a sustainable regional agricultural system.

The system analysis was not confined to agriculture but was much broader in scope. In this connection agriculture was viewed as an interesting field of study for tackling issues surrounding globalization, regionalization and sustainability. The conclusion is that the dependencies between the three sub-systems of sustainability – namely the economic sub-system, the ecological sub-system and the socio-cultural sub-system – constitute an important bottleneck. The dominance of the economic sub-system constantly forces government to take measures to protect valuable but vulnerable ecological and socio-cultural assets under pressure from economic forces. To effect a transformation, a reversal of this relationship of dependence is suggested here: what is currently vulnerable must be made the measure for economic development.

This has far-reaching consequences for our present-day economic system, where mutual relationships are characterized by anonymity. Efficiency and profit are all-important and matter more than maintaining sustainable relationships. Sustainability, by contrast, is predicated on sustainable relationships. The challenge is to design an economic system based on sustainable relationships between parties. This calls for different organizational principles such as reciprocity.

But it also has consequences in terms of control. Our current system is based on a combination of market forces and government regulation. This, in essence, is not a sustainable combination. The system lacks a self-correcting mechanism. Government increasingly needs to intervene in order to resolve market imbalances and disruptions. The challenge is to design an internally balanced system that promotes, rather than threatens, sustainability. A case is made in favour of what is sometimes called the ‘third way’, which is closely related to the ideas of Anthony Giddens. The starting point is a self-responsible society. This sounds great in theory, but is not easy to realize in practice. Not everyone is willing to adopt sustainable behaviour on a voluntary basis. Calls to act more sustainably, no matter how well-intentioned, are insufficient. That is why the essay argues for a system where sustainable behaviour is in people's own interests. This can be done in various ways. A different taxation system is one option, another is the creation of new and robust relationships between rights and duties.
The new system also has far-reaching consequences for the government's place and role. The more self-correcting a system becomes, the less need for government intervention. It is noted that the government's powers to control and adjust events are very limited. The demands we make on government policy and decision-making processes act as impediments. Existing policy is a major obstacle to the implementation of new policy. Over the years, government has become a prisoner of its own regulations. In the new system, government takes a step back. Instead of detailed involvement, hard frameworks are put in place. Clarity and detail are no longer synonymous.

Within the new system it is no longer possible to rely automatically on existing institutions. Most existing organizations were conceived to represent old interests. As a consequence, problems are being institutionally perpetuated. Organizations from the past are not necessarily best-suited for tackling the challenges of tomorrow and beyond. There is a need for new themes, new relationships and new coalitions. These can open up new prospects and reduce the importance and significance of existing problems and issues.

The proposed transformation also touches on the political domain. Most political debates are currently dominated by specific interest groups. A new economic system calls for a new valuation base. Discussions centring on conflicting interests lead to compromises that leave the underlying foundations intact. The proposed sustainability solutions entail a different allocation of responsibilities, a different positioning of government and different relationships between citizens and government. The issues at stake have a high ideological content. This can reenergize and revitalize the political debate – because a battle of values is more inspiring than a tug-of-war over conflicting interests.
1. Introduction

It is widely acknowledged that agriculture and the countryside are undergoing radical change. This, in fact, is a process that has been going on for decades. Many studies, analyses and policies have been devoted to the subject. So why devote yet another paper to the subject?

There are several good reasons for this. First of all, many still see the relationship between agriculture and the countryside as problematic. Due to the perceived tension between agriculture and nature, current solutions often have the characteristics of a compromise. The step towards an overall integrated approach is difficult. Another problem is that citizens may call for sustainably produced food and express dismay when confronted with the excesses of large-scale factory farming, but as consumers they often fail to back their words with actions.

The need for a new approach is undisputed – and a great deal has already been invested in this. Rural renewal has been high on the agenda for decades. But so far, sustainable solutions have failed to materialize, suggesting that there are hard-to-solve problems that we cannot get to grips with. Despite numerous policies and countless projects, there is a broad consensus that steps forwards have been made, but without tackling – let alone resolving – the problems at the root. Most projects either target specific aspects and relationships or are of limited effect: after a promising start, they peter out when the subsidy dries up.

Failure to solve problems may point to a flawed approach. Perhaps we could do a better job when it comes to the way we organize things and set up our processes. This has received a lot of attention in the past twenty years. We have learned the importance of building support and acceptance for change. All relevant parties must be involved in the processes from the outset. But this too is no guarantee for success. Examples abound of projects that have become bogged down in endless energy-sapping consultation. Initiatives that start with high hopes do not always lead to inspiring solutions. Many wheels have been invented, but without serving to drive change and bring the envisaged improvements any nearer. And the problem is compounded by our political culture in which minor successes are presented as major steps forward.

Alternatively, it may not be so much our approach that is to blame, as the fact that we have misdiagnosed the problem. It could be that we are treating the symptoms instead of the real causes. After all, the causes of obstinate problems tend to lie well below the surface and are notoriously hard to identify. This is the angle we take in the present
Accordingly, our aim is to probe more deeply and get the sharpest possible focus on the underlying problems. Having done this, we will look for viable routes towards new solutions, explore whether new concepts are necessary, and see how these can be developed and put into practice.

But there is a second reason for this study, namely our conviction that agriculture is an interesting field of study for cultivating solutions that are relevant to the wider world. Think, for instance, of sustainability problems and, more specifically, the question how we can make our society more sustainable. Sustainability is a pivotal issue in agriculture, which effectively combines the economic function of food production and the public function of the management of common goods such as nature, countryside, water, soil and air. What is economically expedient is not always desirable from a sustainability perspective and, vice versa, sustainability efforts are often not economically viable. Evidently, sustainability is not, or not sufficiently, profitable in our economic system.

In terms of control, too, links can be made with issues outside agriculture. There are currently two dominant forms of control in agriculture: market forces and government regulation. In policy terms, agriculture is seen as an economic activity. The farmer is an entrepreneur: his cows are a means of production and his income depends on the market. At the same time, the agricultural entrepreneur is confronted with a spate of government regulations in such fields as spatial planning, the environment and animal welfare. This combination of market forces and government regulation is generally perceived as a problem, and not just in the agricultural sector. Solutions often involve shifts in the balance of power between the two forms of control. Some argue for more government regulation to temper the undesirable effects of market forces (in which case the market is seen as the problem), others contend that the market must be given more scope to resolve sustainability issues (in which case regulation is seen as the problem). The debate about control is often confined to the question: more regulation or more market discipline? All too often this ‘regulation or market’ debate ends in compromises that please no one. However, instead of trying to reconcile the two, we could also ask ourselves whether it is wise to continue relying on these traditional approaches. Haven’t the flaws of both been abundantly proven? If so, in what direction should we seek alternatives and what changes do these alternatives require? The need for an in-depth and fundamental review is not confined to the control structure. The financial crisis and subsequent economic recession have confronted us with the need to re-think the very principles of our economic system. There is a broad consensus that fundamental change is imperative. This is no ordinary economic downturn that we have seen so often in history. Things will never be the same again, so many believe. Nor is this necessarily a bad thing. A permanent focus on a lower level of prosperity would promote sustainability. And perhaps we have also too easily equated prosperity
with well-being and happiness. Scientists and politicians are united in the view that a radical change of policy is required. A similar opinion is prevalent within the economic domain itself, even within the corporate sector. Banks, once assumed to be rock-solid bastions of financial security, have been found to be built on sand and needed emergency aid to prevent them from collapsing. And many also see this so-called economic crisis as a symptom of a deeper moral crisis, most clearly symbolized in the obscene remuneration and bonus culture. In short, the need for change extends well beyond the economic domain alone.

The relationship between regionalization and globalization is a third interesting issue whose relevance is not limited to agriculture – though the tension between the two is particularly clear in this sector. Food chains extend across the world, which has positive as well as negative effects. One positive aspect is the availability of products from all over the world. Another is that the availability of products is less tied to seasons, giving consumers a wide choice of fruit and vegetables all year round. Globalization also has positive sides from a sustainability perspective, because it helps to ensure that production can take place where conditions are most favourable. This is giving rise to specialization at global level. Bulk production is shifting to regions where a lot of land is available, such as Eastern Europe or North and South America. Where land is scarcer, such as in the Netherlands, agriculture and market gardening are moving in a more knowledge-intensive direction. Production can take place elsewhere, while the Netherlands concentrates on such activities as seed and seed crop improvement. In other countries, where more land is available, land prices are lower because there is less ‘land hunger’. As a result, agriculture need not compete with alternative uses such as housing, infrastructure (e.g. road building) and nature. Another benefit in some of these countries is the larger supply of cheap labour. In the Netherlands, by contrast, conditions are favourable for knowledge-intensive activities where maximum use can be made of the presence of a well-developed knowledge system.

But globalization also has disadvantages, such as in the field of the environment. Not all countries impose strict environmental regulations, so that production tends to gravitate towards areas where environmental and nature protection are less of a priority. Producers can thus side-step cost-inflating or revenue-reducing environmental regulations. In this way, we basically export our environmental problems. An associated problem is the vast environmental cost of global food chains in terms of food miles.

Yet another problem concerns the transparency of international food chains. A large number of parties are involved, which makes it difficult to give cast-iron guarantees on health aspects. Detailed records need to be kept and that is not easy in countries where large sections of the rural population cannot read or write. The distribution of wealth is another issue mentioned in this context. Globalization reportedly widens
rather than narrows the prosperity divide. It is also claimed that globalization has a negative impact on cultural diversity. Regions become increasingly alike and regional identities become less distinct, or are even lost altogether. The result is cultural impoverishment. Diversity is under threat because it is perceived to be economically unprofitable.

Regionalization is often seen as a step back in time, a deliberate turning away from progress and a denial of the advantages of globalization. Besides, the forces driving globalization are said to be too strong to resist. Globalization enables us to increase productivity and reduce costs. Why use more means of production if things can be done more simply and cheaply? All this sounds logical enough but it evades the central question: is progress as we understand it really progress? To find the answer, we need to know the impacts of progress. What are the disadvantages and can these be cancelled out? There are numerous examples of innovations which served to boost productivity but also had adverse effects whose costs were never calculated. In this respect, too, agriculture provides a fascinating area of study. There is a tension between the economic benefits of modern technology and its impacts on the environment. This is a recurring policy problem. With many innovations, the costs of the adverse effects could be passed on elsewhere. The beneficiary of the advantages never paid the costs of the disadvantages. So innovations were adopted, regardless of their negative effects. However, society has now become more wary of innovation, particularly as new technologies are often associated with undesirable increases in scale. Factory farming is a case in point: there are now strong calls to impose curbs on intensive farming operations.

In short, there are plenty of reasons to take a closer look at issues surrounding globalization and regionalization, with a specific emphasis on the agricultural domain. However, taking such a broad approach is not without risk. We must take care not to lose ourselves in generalized arguments that add little to what has already been written and said. To find incisive solutions to persistent problems, we need a sharp focus and a clear structure and approach. We have therefore structured our report as follows. Chapter 2 centres on the analysis. The systemic approach provides the framework. An attempt is made to identify the issues surrounding agriculture and the countryside. Why has so much effort produced so little in terms of sustainable solutions? What is going systematically wrong and why are we persisting in making the same mistakes over and over again? To find the answers to these questions, we have chosen to approach the problem from a broad angle. Though our specific ambition is to work on a sustainable regional agricultural system, both our analysis and our search for solutions will draw amply on insights and viewpoints that are prevalent outside agriculture. In fact: we believe that such a ‘detour’ can actually help us to avoid restricting the scope of our search too much from the outset. The
relationship between agriculture and social issues is therefore twofold in this report. We believe that knowledge and insights from outside agriculture can help us get a sharp focus on the issues within agriculture and, at the same time, that solutions and new concepts for agriculture can be translated to a wider social context. At the end of this chapter we will summarize the systemic errors and indicate what transformations are required. Chapter 3 gathers together the outcomes, looks at new solution approaches and formulates the renewal tasks. The result has the nature of an innovation agenda.
2. Systemic errors

2.1 Introduction

As noted, a broad approach carries the risk of becoming diffuse and directionless. So we need to remain focused and sharp. The first thing we must do is get a good grip on the nature of the problem while selecting an approach that can take us further. At the same time we must avoid demarcating the problems too narrowly and thereby fail to do justice to the core of the problem. Because we then risk devising solutions that merely treat the symptoms instead of the causes. Therefore, Section 2.2. starts by discussing the approach underlying the analysis. Next, Section 2.3. centres on the economic system – and with good reason, given the current crisis. We will look at the key characteristics of the internal workings of the system. What makes our current economic system tick? Then, we proceed to consider the relationship between the economic system and the environment. We conclude with questions about the allocation of responsibilities within the economic system. Section 2.4. then addresses the question of valuation. What can we say about the way we value things in our present system? In Section 2.5 we deal with the role and the functioning of the government with an emphasis on control issues, after which Section 2.6 homes in on organizational aspects in so far as relevant to sustainability problems. One particular aspect here is the human scale. How recognizable and transparent are our systems for the individual? These questions are given attention in Section 2.7. In view of the strongly political nature of such questions, we also take a look at the role of politics in Section 2.8. Finally, the results of the analysis are summarized in Section 2.9.

2.2 Selected approach

As indicated, the breadth of the subject combined with the ambition to make an in-depth analysis demand a careful approach. The approach we have selected draws on three key angles of analysis: systemic (Section 2.2.1), substantive (Section 2.2.2.) and institutional (Section 2.2.3.). Each of these perspectives is analysed in detail.

2.2.1 Systemic focus
When a system fails, you want to know why. Sometimes a system can function smoothly for years and then suddenly falter, embark on a downward spiral and, as it were, go into self-destruct mode. This may simply be down to incompetence, an inability to intervene, mend the cracks and get things back on track. But it is also possible – and this is even worse – that actors actually benefit from keeping the
problem intact. Sustainability is a case in point: awareness of the problem – and its
causes – is widespread. There is also a broad consensus that we cannot continue as we
are doing now. But actually taking measures to solve the problem is another matter.
Evidently, certain parties have a vested interest in perpetuating existing patterns. We
are continuing to put ecological systems under pressure and use up natural resources
at a relentless pace because this is profitable.

Almost every system has an inherent resilience and is capable of overcoming problems,
either under its own steam or through interventions from the outside. In fact, solving
day-to-day operational problems is usually an inherent part of a system. The system's
design contains in-built routines to ‘systematically’ resolve such operational problems.
But when it comes to systemic problems, the system's self-correcting ability is often
limited.

Systemic problems only occur when the system's fundamental principles cease to
function – when, so to speak, its operating software is no longer fit for purpose. In this
case, simple repairs are no longer sufficient and fundamental root-and-branch
interventions are required. Remediing such systemic errors is particularly difficult
because the system is hard-wired to maintain itself. Likewise, most actors are so
accustomed to the system that no one questions its fundamental viability. The natural
reaction, therefore, is to seek interventions that respect the integrity of the system but
fail to tackle the actual causes of the problems. In other words: the symptoms are
treated instead of the disease.

To address a systemic problem, you need to probe deeper and unravel the underlying
inter-relationships and interactions. One key issue concerns the question why a system
has lost its self-correcting ability. Self-correction and the ability to detect problems and
look for solutions are key characteristics of a system. Does a system have the ability
and resilience to identify and respond to problems in time? As recent events have
shown, our financial system patently lacks this ability for self-analysis and self-
correction. But surely there are always perceptive observers who see the writing on the
wall and are able to sound the alarm before it is too late? There certainly are, but as
with the financial crisis, such prophets are usually found outside the system. The
system itself believes it can afford to ignore the warning signals.

One characteristic of a system is that processes take place in an ordered and
predictable (i.e. systematic) manner. This has obvious advantages. But it also has
disadvantages – notably in terms of learning. The scope for learning within the system
is determined and demarcated by the system itself. And that is a weakness. Learning
assumes an alertness to matters that can be improved. But this is not sufficient. Those
involved must also have an interest in carrying through the necessary changes. The will
to change also depends on the prevailing culture. The culture within a system or organization can encourage early recognition of problems and the taking of timely action (drastic if need be) to set things right. But there may also be a window dressing culture aimed at avoiding errors coming to the surface. Organizations can be very good at concealing problems. But there is more. Every system has certain fixed characteristics that are never questioned. The fundamental principles, for instance, are rarely held up to the light. Learning takes place within the parameters set by the system itself. Most systems are averse to any form of introspection that may necessitate systemic adjustments. Even when faced with external developments that threaten their survival, they tend to resist change – for the simple reason that the actors within the systems have no interest in identifying and tackling the problems. Amongst other things, they fear that such remedial actions might undermine their own positions or cause tensions with other parties. As a consequence, problems are swept under the carpet. People gradually become prisoners of the system. These are the conditions that typically give rise to pyramid structures, where everybody has a vested interest in keeping the system ticking over as it is. There is no way out – even for those who want to escape. It is in the nature of the pyramid that whoever pulls the plug on the system is the first to suffer.

Another important factor is the system's relationship with its surrounding environment, particularly in terms of dominance. A dominant system can afford to ignore signals and dismiss warnings, causing it to become introspective and self-affirmative. Dominant systems also have the power to offload the consequences of their problems onto others outside the system. Western economies, for instance, are accused of exporting problems. We can maintain our western prosperity by shifting environmentally-polluting production to countries with less stringent regulations and enforcement. Viewed from this perspective, sustainability is also a prosperity issue. Our footprint illustrates this. The West can continue consuming to its heart's content by exporting problems. The system can afford to do this, partly because developing countries are dependent on the West. Strict environmental regulation would impede their economic development – and their national income depends on exports to the developed world.

Another example of a system dominating its surrounding environment concerns the relationship between government organizations and society. Alternatively, citizens might perceive problems where the government sees none, simply because it has not defined the issue in question as a problem in its policies. We will look at this in greater detail in Section 2.5.

The nature of the problems in agriculture gives every reason to view these from the systemic perspective. The problems within agriculture are numerous, as are the
problems between agriculture and society. Entrepreneurs complain bitterly about the
growing regulatory burden and the associated administrative costs. Society is unhappy
about the negative impact of modern agriculture on the environment. Nature reserves
suffer from ammonia emissions from cattle farming. Many specific elements in the
countryside have disappeared over the years to make way for the use of large-scale
machinery. Fertilizers and pesticides leach into surface and soil water. Land is
becoming saturated with phosphates. Stable systems also attract criticism on the
grounds of animal welfare. Entrepreneurs, for their part, complain that they are being
priced out of the international market because they are required to meet far more
stringent regulations than their competitors in other countries. Health is another issue.
How can food safety be guaranteed if food chains continue to internationalize? And
this is just a small selection of the grievances.

In addressing these problems, it is important to select the right approach. Until now,
problems have often been analysed in isolation and then tackled with targeted
measures. An alternative approach is to see the problems as part of an interrelated
whole. Such an overall joined-up approach prevents interventions that treat the visible
undesirable effects (i.e. symptoms) but leave the underlying causes intact, or solve one
problem while aggravating or creating others.

To find out the connections between agricultural problems, we must take a look at the
development of agriculture in the Netherlands in the second half of the previous
century. After World War II the Netherlands went through a period of reconstruction.
The economy had to be revived. The Dutch economy was traditionally dependent on
international trade, so the country needed to rebuild a strong international
competitive position. This meant keeping wages low and securing a reliable supply of
cheap food. The agriculture policy was therefore aimed at boosting productivity and
thus reducing the cost of food. The success of the policy was manifest in a strong rise
in productivity from the 1950s onwards. This success was attributable to a carefully
thought-out combination of factors. For one thing, there was an effective and heavily-
subsidized knowledge system which churned out a constant stream of new inventions
that served to increase production and/or reduce the cost price. Subsidized information
programmes kept entrepreneurs up to date with the latest developments and the
government also encouraged investments in new technology with financial incentives.
Sales, too, were no problem thanks to the European system of guaranteed prices for
staple products such as milk and grain. A system of trade measures within the then EEC
artificially kept prices much higher than on the world market. And cheaper imports
from outside the EEC were subject to high import duties. At the same time, exports
outside the EEC were promoted by export subsidies. The costs of overproduction were
borne by the member states and were not charged to the agriculture sector. Heavily
subsidized land consolidation projects were carried out to suit the needs of modern
agriculture. Meandering streams were transformed into efficient irrigation canals to permit fast drainage. Any features in the countryside that prevented the efficient use of increasingly large-scale machinery were removed. In short, everything was done to pave the way for the application of technological innovation. Policy instruments and conditions provided the right mix to encourage entrepreneurs to swiftly adopt new inventions. As noted, this system was extremely successful, at least in economic terms. Productivity grew at an unprecedented rate.

This continued until the 1970s when the first question marks were placed behind the agricultural success story. People began to see the disadvantages of this rapid development and a public debate arose in the 1970s and 80s about the drawbacks of this system. The political will to foot the bill for surpluses faded. The warehouses were packed to the gunnels with butter and milk powder, because agricultural production far outstripped demand. As a result, the market and price policy was radically overhauled. Government information services were privatized and were no longer made available free of charge. There was also a stronger focus on the negative effects that intensive and large-scale agriculture was having on nature and the countryside. A raft of environmental measures were introduced to address problems such as the leaching of fertilizer and pesticides into surface and soil water. Environmentally-harmful practices were banned or placed under strict regulation. Land allocation no longer solely catered to the interests of agriculture: now the improvement of nature and the countryside was also a priority. Nature and countryside elements were given protected status in land use plans. Many production-enhancing interventions, such as drainage, were subject to planning permission. Licensing systems were introduced alongside production-restricting measures.

The result was a complex regulatory structure which entrepreneurs experienced as overly restrictive. They felt they were getting the worst of both worlds. On the one hand, the abolition of subsidies and other forms of assistance made them increasingly dependent on the market; on the other, government regulation made them increasingly unable to compete in that same market. The tension inherent in this situation cannot be resolved with piecemeal measures such as exemptions and dispensations. These merely alleviate the surface symptoms, while leaving the underlying systemic problem intact.

2.2.2 Substantive focus
Besides the systemic angle, we also need a sharp focus on the substantive issues. This is particularly necessary given the fact that sustainability problems come in many shapes and forms. In addition, sustainability is a portmanteau term that is capable of many interpretations and often conjures up rather general associations. One broadly accepted definition is contained in the 1987 Brundtland Report entitled “Our Common
Future”. In this report, sustainable development is defined as a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. But this is not so much an objective definition, as the formulation of a principle or objective. What we must do, therefore, is translate this concept into concrete practical terms. We must make it more specific before proceeding with our systemic analysis.

There is a broad awareness that our society needs to be made more sustainable. Sustainability is widely perceived to contain three sub-systems known as Triple P: People, Planet and Profit. These are, respectively, the socio-cultural sub-system, the economic sub-system and the ecological sub-system. The sustainability problem is often described in terms of the tensions between these three domains. Ecological and socio-cultural values are under pressure and governments repeatedly feel compelled to intervene to set things right. Why is this? Why is the system constantly pulling us in a direction that we consider undesirable? Why does unsustainable behaviour not provoke a counter-reaction? Why is the system unable to correct itself?

Our assumption in this analysis is that an unsustainable system encourages unsustainable behaviour among its actors, who evidently do not see sustainable behaviour as rewarding. Structures and forces active within these structures compel or invite unsustainability. Put differently: the system promotes unsustainability. This means that attention must be devoted to institutional factors.

One interesting question is: why do flawed systems survive for so long? Why do we not intervene and replace them sooner? Why do we persist in treating the symptoms rather than the disease? Why do we expend so much effort merely to achieve short-term solutions? One frequent, but unsatisfactory, answer is that our electoral system at national, provincial and local level gives politicians no incentive to pursue long-term solutions. Because these take far too long to produce visible results. Politicians prefer eye-catching short-term measures that help them get re-elected. The fact that these measures only have a transient effect and are mainly of symbolic value is less important than their vote-winning potential.

Another reason to change our approach concerns the fact that an enormous number of sustainability initiatives are taken, but often on an isolated and ad hoc basis. Groups of citizens may decide to back their words with actions by taking initiatives in the fields of energy saving, nature management and community exchange networks. Admirable as these initiatives may be, they are unlikely to help make a major step towards a sustainable society. They are carried out on too small a scale (and may actually be counterproductive at a larger scale). Whatever gains they achieve can be easily cancelled out by the unsustainable actions of others. Their voluntary nature
often means they lack momentum and commitment, causing them to fall apart when
the participants disagree about the direction to be taken. The absence of an over-
arching sustainable structure also means that these civil society initiatives take place in
an uncoordinated and piecemeal manner. This, incidentally, is not to suggest that
sustainable structures must necessarily be large scale. Quite the contrary in fact, as we
will see later in this report.

2.2.3 Institutional focus
This brings us to the third element in our approach, namely the institutional angle.
Besides the substantive issues, we must also look at the institutional aspects when
addressing sustainability problems. In fact: our basic assumption is that the problems
are probably caused, and certainly perpetuated, by their underlying institutional
organization. Institutional factors can give parties a vested interest in unsustainable
behaviour. This also means that constructive solutions, advice and suggestions
generally come to nothing unless they are accompanied by institutional changes. Put
differently: analyses of problems that fail to take on board institutional aspects are, by
definition, flawed.

But what exactly do we mean by institutional factors? Sometimes the term ‘institution’
is narrowly interpreted as referring to the formal organizational structure within
institutions. In our context, we prefer a broader interpretation. Our central question is:
why do systems function as they do? Why do actors behave within a system as they
do? Our focus is therefore not confined to the structure of organizations, but extends
to the wider aspects such as procedures, organizational culture, leadership styles,
decision-making processes and habitual modes of action. The reason for this is that
informal aspects often have a greater influence on actual behaviour than formal
structures. What is taken for granted within an organization? What are the
unquestioned certainties? What are the do’s and don’ts? What characterizes the
mutual relationships between parties? How do people treat each other?

2.3 Economic system

2.3.1 Introduction
The financial and economic crisis has cast doubt on established assumptions. Old
values no longer hold true. The nature and full extent of the crisis was not immediately
clear - but what initially seemed to be a ‘local’ mortgage default crisis in the US
housing market rapidly spread to the entire financial system and ultimately sent shock
waves through the global economic system.
The scale and scope of the crisis is now universally clear, but opinions are divided on the cure. A broad spectrum of interventions and solutions have been presented and partly implemented. Many of these measures are designed to avoid undesirable effects, such as a fall in purchasing power (and a resulting drop in demand), or to counter excesses, such as the obscene bonuses in the financial world. It is also widely believed that the supervision of financial institutions must be improved and that a ban should be imposed on financial products that are too speculative or so ‘virtual’ that every connection with the real economy has long since evaporated.

Such solutions, however, merely modify the system; the actual foundations of the system are left intact. Others argue for more radical reform. They see the crisis as a systemic failure and contend that the whole system needs to be overhauled. The key characteristic of a systemic crisis is that problems occur in a systemic manner. The system keeps repeating the same error so that interventions, no matter how well-intentioned, merely tackle the symptoms while failing to address the deeper causes. For instance, it’s all very well for bank executives to say ‘mea culpa’, but that’s hardly going to set the system in order.

There is a broad consensus that our economic system is not sustainable. Apart from causing the irresponsible and rapid depletion of our natural resources, it is also having severely negative impacts on the society in which we live and work. Evidently our system encourages, and possibly even compels, the players to behave in an unsustainable manner. To find out what economic aspects are contributing to this unsustainable behaviour, we need to take a closer look at the economic system. A wide-ranging and detailed study of economic systems obviously falls outside the scope of this report, so we will only focus on certain aspects of our western economic system that are relevant to a sustainable regional agricultural system. As indicated earlier, we will look mainly at institutional aspects.

First, we will look at the internal functioning of the economic system and then at the relationship between the economic system and the surrounding environment.

2.3.2  Internal functioning
When discussing the internal functioning of the economic system, we will look successively at the basic principles of the economic system (Section 2.3.2.1.), at market forces as the dominant mechanism (Section 2.3.2.2.), at supply-and-demand issues (Section 2.3.2.3.), at the relationship between macro- and micro-level (Section 2.3.2.4.), and at the meaning of growth within the economic system (Section 2.3.2.5.).

2.3.2.1  Homo economicus
Like every system, the economic system is founded on the basis of certain core concepts. Economics is the science of scarcity and rationality. If everyone had access to an unlimited supply of goods and resources, there would be no need for rational considerations. You could then simply take what you wanted without having any reason – let alone need – to make choices. Reality, as we all know, is different. We continually find ourselves in situations of scarcity. We can only spend our money once, no matter how many wishes we have. So we are compelled to make choices. We must be selective. When it comes to making these choices, homo economicus is a highly rational actor, seeking to extract maximum gain from limited resources. Problems or wishes are analysed, alternatives are weighed up and choices are made – always with a view to getting the best value for money or achieving the objective with the least effort. Where necessary, purchases are postponed if that seems the best longer-term option. Entrepreneurs act in the same way. They weigh up investments against expected revenues. Investments are made if the return is perceived to exceed the cost, and these investments continue to be made until the marginal cost is equal to the marginal return. Entrepreneurs are constantly seeking smarter production methods with one goal in mind: produce more with less.

The above, of course, portrays homo economicus as a paragon of rationality. As we all know, economic science may assume rationality, but in reality homo economicus is a less predictable and more fickle being. The ideal homo economicus and the real homo economicus are worlds apart.

Consumer purchasing behaviour, for instance, proves to be a lot less ‘ideal’ and ‘rational’ than the model assumes. Rarely does the would-be buyer have a full and reliable picture of all the alternatives and of the pros and cons of the proposed purchase. What’s more, situations are constantly changing, and the implications of these changes cannot always be foreseen. Back in the mid-20th century Simon already concluded that people’s actions are much less rational than previously assumed. He introduced the term *bounded rationality* to express the idea that people act on the basis of the limited information at their disposal. Besides lacking full information on the available alternatives, we are also usually unable to anticipate the consequences of our actions. A second point is that even choices made on the basis of available information tend to be less rational than assumed. Because the human ability to absorb and process information is limited. We use only part of the information available to us.

Another question, incidentally, is whether we would behave purely rationally even if we were capable of doing so. The image of man as a pre-programmed decision-making machine is hardly attractive. In fact: we actually enjoy taking irrational decisions from time to time, consciously or unconsciously allowing emotions and moods to overrule
rationality and calculation. Following the latest fashion, for instance, is hardly justifiable in terms of costs and benefits. We buy goods and services, not because we need them, but because we want to stand out (as the first adopter) or keep up with the Joneses. Emotions also enter into the equation. Uncertainty about the future makes us more careful in our spending patterns. We save rather than spend. Such behaviour is rational enough if governed by our own expectations for the future, but not if we are merely following the herd. In the latter case, psychology takes over from rationality. In this way, a crisis can be triggered simply because everyone believes that a crisis is coming: even the most robust bank will get into difficulty if everyone – driven by emotional rather than rational reasons – decides to withdraw their money on the same day. Some may argue that even these emotions are based on underlying rational reasons, but that is not the same kind of rationality as defined in classical economics.

2.3.2.2 Market mechanism

The market mechanism is pivotal to the prevailing economic system in the West, and its worldwide significance is spreading rather than diminishing. Former centrally planned economies (e.g. Eastern Europe, China and Vietnam) are creating more scope for market forces. But even in the Netherlands, many former public services have in the past decades been privatized or hived off to give freer rein to the market.

There is a deep-felt belief in the market as the best means of achieving our core economic values, such as efficiency, rationalism and productivity. With self-interest acting as the catalyst, the market almost automatically leads to greater prosperity by stimulating competition, improving efficiency improvements and keeping everybody focused.

The upshot is that intervention only takes place if there are good reasons for this. The market, after all, is a self-regulating system and is best left to its own devices. By matching supply and demand, it leads to fair pricing and equilibrium. No intervention is necessary, because the system is geared to achieving balance of its own accord. Just let the market work, and everything will be alright, so many argue.

But we now know that it is unwise to put all our trust in the market mechanism. For one thing, the market is not suitable for matching the supply and demand of all goods and services. This applies notably to goods and services which are indivisible or inherently difficult to trade. Over the years governments have therefore assumed all sorts of responsibilities that could not be entrusted to the market. For instance, there is no market – and hence no pricing mechanism – for clean air or the fair distribution of prosperity. Defence is another example. Ensuring a country's security is not a task that can be divided up and allocated in individual units to individual citizens. Security calls for a collective approach. A second weakness of the market is that not all costs
associated with the production of a product or service are reflected in the market price. For instance, many production processes cause negative effects, such as environmental pollution. The costs of repairing or compensating this damage is usually not reflected in the market price. A third point of criticism is of an institutional nature. A market transaction involves a change of ownership where the buyer purchases a product from the seller at an agreed price. But this can take place in anonymity. The buyer and seller need not enter into a lasting relationship: once the price has been paid and the product transferred, the relationship ends. When it comes to sustainability, this has disadvantages. Because sustainability presumes lasting relationships from an institutional perspective. Allocation of sustainability responsibilities on a strictly individual basis is not logical. In other words: sustainability cannot be divided into parts and subsequently assigned to individual citizens. It is in the nature of sustainability problems that these demand a collective approach.

Another important consideration is that pricing mechanisms not only apply to products, but also to production factors – and not just to tangible production factors such as raw materials, but also to intangible factors such as wage negotiations. In times of unemployment it is difficult for trade unions to demand high pay rises. The balance between production factors is also crucial. At present, labour is relatively expensive and raw materials are relatively cheap. It pays for entrepreneurs to replace labour with machinery, because the resulting low cost price helps them compete in the market. As a consequence, research and development efforts tend to focus on labour-saving technologies instead of labour-intensive technologies. In times of high unemployment you would expect the reverse. The same applies to consumers. Due to high labour costs it is often cheaper to replace appliances than to have them repaired after the guarantee has expired. In social terms, the market mechanism can give rise to undesirable differences in income – which raises issues regarding the distribution of wealth. Markets have little to offer people with empty pockets, but all the more to people with fat wallets.

All these drawbacks have prompted governments to intervene and to impose restrictions on the market mechanism. Modern and affluent societies, for instance, have an elaborate social welfare system which aspires to a fairer – often tax-driven – redistribution of wealth. The earnings of some are subject to taxation to solve the problems of others. Another example concerns the introduction of health & safety laws to ensure good working conditions. Beyond the social domain, governments have also seen fit to introduce extensive planning and environmental laws in order to mitigate the adverse effects of economic activities.

There is nothing inherently wrong in the aspiration to improve efficiency and productivity. Far from it in fact: efficiency can actually promote sustainability, for
instance by reducing our consumption of raw materials. But the quest for greater productivity can also lead to problems, such as imbalances in the relationship between the private and public sector. It is important to stress that productivity improvement is not a problem in itself, but productivity improvements in one sector can have a negative effect on other sectors. For instance, a sector that has achieved labour productivity improvements can easily afford to award wage increases. However, when this leads to higher wage demands in sectors where productivity has not improved, this can be a problem. A labour-intensive sector like healthcare is a case in point. When health workers demand higher wages, the sector must seek additional cash elsewhere as it cannot earn this cash internally (at least not if it continues providing the same quality of service). This phenomenon is known as the Baumol Effect. Baumol was an American economist who studied labour productivity and its effects on prosperity. He showed that higher productivity in one sector can cause problems in other sectors.

The internal coherence within a market context is another aspect that demands our attention. In an economic system people work together for as long as that is beneficial. Costs are passed on wherever possible. Productivity, efficiency and profit are all-important. This is what motivates the formation of relationships. These relationships are maintained for as long as they are profitable and are terminated as soon as other ways of working or alternative coalitions are perceived to be more lucrative. Anonymity is a characteristic of many of these relationships. There are vast numbers of suppliers and consumers in our food system but – barring a few local and regional initiatives – no strong ties exist between the two sides of the market. Globalization has led to even more anonymity within food chains. This is natural. Ongoing specialization means that more and more parties are playing a role within worldwide food chains. This makes it extremely difficult for producers in developing countries and consumers in West Europe to build and maintain stable relationships with each other – let alone enter into direct deals or contracts with each other. Certain initiatives are being taken to address this situation. Sustainable food chains are being set up, and governments are seeking to make improvements (e.g. in the field of health) through voluntary or compulsory measures at national and international level. But despite all these efforts, the market mechanism continues to reign supreme. Evidently, many still believe that sustainability can be achieved without abandoning the market mechanism. But is their faith in the market justified? Crucially, the market places great power on the demand side. So in a market context, sustainability can only be achieved if there is enough demand for it. Put differently: producer behaviour depends on consumer behaviour.

2.3.2.3 Supply-driven or demand-driven?
As with any other system, it is important to know what the driving forces of our economic system are to understand what makes it tick. Many economists have
grappled with this question, frequently focusing their attention on the two sides of the system: supply and demand. Supply economists argue that every supply generates its own demand. Demand economists, by contrast, assume that the demand for products drives economic development: no demand, no production. This issue has been intensely debated, but it is now widely agreed that over the past few decades demand has replaced supply as the main economic driver. A demand-led economy has the advantage of avoiding products being manufactured that nobody wants. In its purest form, a supply-demand model can only function smoothly if producers have the power to determine what consumers must buy. This may be conceivable in a tightly-controlled planned economy, but not in a modern society where consumers decide for themselves what they buy or don’t buy. The supremacy of demand is therefore widely accepted and taken for granted. The size and direction of demand thus also determine the state of the economy and the direction in which it develops. If uncertainty among consumers is reflected in reduced spending, this has an immediate impact on economic activity – which makes sense, because producing goods and services that nobody wants is pointless in a market context. This principle has become so self-evident that it now even governs domains that were formerly almost entirely regulated by government. Health care and education are good examples. The assumption is that a demand-led market mechanism will lead to improved efficiency by giving consumers more power. They, after all, know best what they want and also have a direct interest in buying good-quality products and services.

A demand-led market puts the needs of the consumer first. This sounds a lot simpler than it is. Needs can vary strongly. High earners do not want the same things as low earners. Needs also change over time. What’s more, needs sometimes conflict with each other. We want security and adventure, uniformity and diversity, stability and change, commonality and individuality. This tension, in fact, has been found to be the outstanding characteristic of an individual’s set of needs (Vlek, Reisch and Scherhorn).

The dominance of demand also features prominently in the many analyses of the causes of the economic crisis in 2008 and the instruments applied to get the economy going again. The slump in demand is widely seen as one of the chief causes. Consumers reduced their spending because they lost their job and could no longer make ends meet or because they were uncertain about the future and considered it wiser to save a larger portion of their income. The resulting decrease in demand triggered a downward spiral of declining profits, falling employment and growing uncertainty. Governments then sought to compensate the loss of demand by bringing forward infrastructure projects and reducing taxes to maintain purchasing power. In this way the government tried to stem the decline in private spending, in the belief that the extra debt resulting from the temporary increase in public spending can be
repaid when the economy recovers. This is in line with Keynes, who advocated boosting demand as the antidote to the economic depression in the 1930s.

However, the demand-led solution is more controversial from a sustainability perspective. It is widely agreed that our natural resources are too limited to sustain western consumption patterns. And, as footprint calculations convincingly show, the earth is also unable to cope with the negative environmental effects of our consumerist lifestyle. In this light, it is odd to place our faith in a demand-led system which is more likely to exacerbate than to resolve sustainability problems. Not surprisingly, many see overconsumption as one of the chief threats to sustainability. This is a systemic dilemma. Demand must be increased to keep the economic system going, but must be reduced to achieve a sustainable system. We have effectively become the prisoners of consumption. We might like to change from a sustainability perspective, but cannot afford to do so from an economic perspective. Any attempt to consume at a lower ecologically-sustainable level will undermine our economic system. Viewed from this angle, our system appears to be pre-programmed for unsustainability.

A glance at the agricultural sector reveals several parallels with the above analysis. Producers have a traditionally weak position in food chains. Only a fraction of the consumer price goes to the producer. The margin in subsequent links in the chain is larger. The agricultural entrepreneur has little or no influence on market conditions. Apart from quality, he can really only compete on cost price. So he is forced to continuously increase productivity in order to remain competitive. Agricultural production is traditionally supply-driven. In addition, the capital intensiveness of modern agriculture makes it hard to switch over to other markets. A milk robot can only milk cows and cannot be used for any other purpose. As a consequence, it is difficult for entrepreneurs to respond to changing market conditions and adjust their products. The fact that these are natural products also imposes restrictions. Even the latest technology cannot significantly shorten the time between sowing and harvesting. To compound the problem, the demand for agricultural produce is just as inelastic as the supply. Consumers are unlikely to eat more potatoes just because prices are low. Consequently, a relatively small oversupply can trigger substantial price falls.

2.3.2.4 Macro-micro
We saw that the central position that economic science accords to homo economicus is open to question – and not just at individual level. It is tempting to assume that what happens at macro level, is simply the aggregate of decisions at individual level. Consumers and businesses constantly make decisions. Add the effects of all these decisions together and you get the ‘macro-economic picture’. A country’s economic condition would then be the sum total of consumer patterns, business exports,
investment propensity and so forth. However, the relationship between the macro and micro level is more complex than appears at first sight. Surprisingly, this macro-micro relationship has so far received scant attention in economic science. We know a great deal about what happens at micro level and macro level individually, but we know much less about the relationship between the two domains.

It turns out that the ‘rational’ actions of individual actors by no means always add up to a rational outcome at macro level. For one thing, ‘individual’ behaviour is less individual than previously assumed. So how individual is micro? We already pointed out that the herd instinct plays a strong role in people’s purchasing behaviour. But there is more. Many decisions are not taken by individuals but by organizations. In addition, there are many macro-economic forces that can influence how an economy develops. Governments can use monetary policy to manipulate interest rates; they can impose international trading restrictions; they can reduce or increase purchasing power by raising or lowering taxes. And if citizens spend too little, governments can compensate by carrying out large public works (e.g. infrastructure projects such as road building). They can also take measures to help ailing businesses through hard economic times. Another point is that citizens and businesses, but also governments, do not just respond to immediate circumstances, but also look to the future. They try to estimate how the economy will develop, and how other players will behave. Are they optimistic about the economy or are they insecure about losing their job? These things are difficult to forecast. In the first place, economic signals can be interpreted in different ways. A large government stimulus package can make citizens more confident about the future but may also be seen as a sign of deep-seated economic problems. A further complicating factor is that people’s actions depend not only on their own outlook, but also on how they think other players interpret the situation. This is logical enough - because the economy is not driven by people’s individual decisions, but by the behaviour of large groups. This behavioural psychology can be seen every day on the stock exchange, for instance. For all these reasons, it is too simplistic to see the macro-micro relationship as a straightforward amalgamation of individual decisions.

Agriculture provides a clear example of the tension between micro and macro level. Besides natural conditions, the producer is also reliant on government measures, trade restrictions, the success or failure of international trade negotiations and so forth. A seemingly minor food safety problem can cause demand to fall sharply. In dealing with all these obstacles and uncertainties, the entrepreneur effectively has only two competitive weapons: price and quality. But even there his room for manoeuvre is limited. When new technologies are introduced, he has no choice. The rule is: progress or perish. But each step forwards provides only temporary respite before the next step
needs to be made in the relentless process of modernization. The agricultural entrepreneur thus finds himself caught in an endless rat race.

2.3.2.5 Economic system and growth

The relationship between the economic system and growth has a central bearing on the subject of this report. Many see the need for growth as so self-evident that there is no need to study the relationship between our economy and growth. After all, without growth we cannot continue to increase, and may even jeopardize, our prosperity. Economic growth is believed to be vital to generate the funding necessary to tackle social problems (e.g. healthcare for the ageing population), environmental problems (labour-intensive and hence capital-intensive technological research and innovation) and global development problems (development aid). Finally, growth is said to be vital to safeguard the continuity of business in general.

The pivotal importance of growth is often traced to the internal dynamics of our economic system. Our system more or less assumes growth as a key condition. Individual businesses that fail to generate a stable turnover and profit are not expected to survive in the long term. There are actually certain good reasons for this assumption. The knowledge-intensive nature of a modern economy demands substantial ongoing investments in training and equipment to keep pace with advancing technology. Technological innovation also makes continuous scale increases necessary. As automation systems become increasingly powerful, they also become increasingly expensive. So increases in scale are necessary to spread the costs over more products and services, and thus also keep the unit wage costs in check. Competition forces everyone to jump on the consolidation bandwagon – because if your cost price is too high, you simply price yourself out of the market. An important factor here concerns the close relationship between technological innovation and economies of scale. Technological innovations are generally designed to cater to a growing scale. So businesses have to grow to survive. Growth is a necessity.

One characteristic of a systemic analysis is that it questions what is generally perceived to be self-evident. When things go wrong on a systematic basis and customary solutions no longer work, it is time to ask whether the fundamental principles are still fit for purpose. The key question in our case is: why is our economic system dependent on growth? This question is particularly topical in the wake of the economic crisis. Mulder and Koster place critical question marks behind the almost universal assumption that growth is necessary. They question whether economic growth is really imperative to maintain employment; and they also wonder whether growth is good for the environment.
The relationship between technological progress and increases in scale also merits attention. Innovations generally compel increases in scale. Modernization and a larger scale are closely linked. Few innovations facilitate reductions in scale. Moreover, there is also an institutional problem here. Existing organizations are, as it were, pre-programmed to grow in size and have little or no interest in reducing their scale. An example from the energy sector will clarify this. Over the past years, various solutions for producing energy in the agricultural and horticultural sectors have been devised. In the cattle farming sector, manure can be converted into energy, whereas energy-generating greenhouses have been developed in the horticultural sector. But entrepreneurs complain that they cannot find customers for their energy. The large energy companies are evidently not interested in small-scale energy production. Their systems are not geared to cope with small-scale supply. The sale of regional produce is marred by a similar problem. Over the past decades, processing, distribution and marketing systems have steadily grown in size. Such bulk-based systems are less suited to processing and marketing regional produce, which is typically supplied and sold in smaller quantities. Consequently, individual entrepreneurs have no option but to set up their own sales channels.

So while the growth-propelling forces remain strong within the economic system, there is also a growing awareness that economic necessity may conflict with other necessities, particularly in relation to the environment. It is also recognized that certain economic processes carry a social cost that is not reflected in the economic cost. Many see this failure to price in undesirable social impacts as a core sustainability issue. Accordingly, there is every reason to take a closer look at the relationship between the economic system and the surrounding environment. This relationship is our central focus in the next section.

2.3.3 The economic system and its environment
We ended the previous section with the observation that our economic system assumes growth, but that growth has detrimental effects for the environment. It follows that the external relationship between the economic system and the environment merits closer scrutiny – because economic activities also have an impact on the world outside the economic system. Income is earned. Raw materials are utilized.

Usually the surrounding environment imposes constraints on a system. Nature abounds with examples of this. But the situation is different when it comes to sustainability. Three sub-systems are commonly identified in connection with sustainability: the economic system, the ecological system and the socio-cultural system. The first thing to observe from a sustainability perspective is that the system is not in balance and is developing in a direction that is undesirable. So why is this
situation allowed to persist? Why do we accept the continuation of activities that not only fail to resolve but actually aggravate the sustainability problems, and thus compel constant piecemeal adjustments? Why is the system not self-correcting?

Part of the explanation lies in the relationship between the three sub-systems – which is not one of equality. The economic system dominates the two other systems. The consequence is that economic growth mobilizes no counter-forces. Ecological and socio-cultural values are too weak to resist and find themselves in a state of dependence on the economic system. The economic system’s environment lacks the power to constrain its compulsive appetite for growth. The economic system thus takes on the traits of a cancerous tumour: in principle it can proliferate unfettered and undermine its environment without triggering any self-correcting reaction. There is no restraint.

Viewed in this light, sustainability problems stem from the fact that parties within the economic system stand to benefit from growth and that the forces active within the economic system are aimed at maintaining existing growth-oriented patterns and practices. The system encourages, and perhaps even compels, growth. At the same time, external forces are unable to initiate the necessary changes. The three sub-systems are interdependent. So the problem can be traced both to the fact that our economic model compels growth and the inability of the external conditions to act as a counter-balance. Economic growth leads to negative effects, but not within the economic system itself. The harm caused to nature and the environment is not expressed as an economic cost. Put differently, the negative effects of economic growth are not reflected within the economic system, but are passed on to the other two systems. The economic system can get away with this because no counter-forces are mobilized within the system and because it dominates the external relationships with the other systems.

The drawing below illustrates this: [systemic sustainability errors; economic sub-system; ecological sub-system; soc-cult sub-system]
2.4 Valuation

The assignment of values plays an important role in the economy. Indeed, in many areas – such as cost price calculation and stock valuation – the process of valuation has been brought down to a fine art. But, as we have already seen, not everything that has social value is assigned value within the economic system. Many external effects of the economic system are simply ignored in economic valuation processes. Assigning a precise value to these external effects is difficult. The customary criteria are not suitable for measuring the value of these effects, because they are too tied to the economic system itself. Products that are manufactured and sold are priced on the basis of supply and demand. Where supply exceeds demand, the price will fall. Vice versa, where demand is greater than the supply, the price will rise. This mechanism works with products that are subject to market forces. But market forces are not capable of assigning a value to all goods. Common goods, such as nature and health, cannot be priced according to market forces. For one thing, these common goods are, by nature, not or barely divisible. Any attempt to divide a common good into smaller constituents compromises its integrity. However, alternative approaches are conceivable for approximating the value of these goods. For instance, the value of a nature reserve could be derived from the costs that the government incurs to acquire and manage the reserve. This is evidently the amount that the government is prepared to spend on it. A related approach would be to calculate the alternative proceeds if the land was given a different use. This, then, is the amount of lost income as a result of using the land as a nature reserve. In the field of healthcare, we can see the costs we incur as an indication of what health is worth to us. After the severe floods in 1953, the
Netherlands embarked on a massive flood defence plan. Dykes were raised and vast flood defence works were carried out. The total value of all these investments basically expressed the price that we as citizens were prepared to pay for our security in the region. But assigning a specific value to security and the loss of human life remains a difficult task – and economic yardsticks are certainly not suitable for this purpose.

Clearly, our economic system has a very limited basis for assigning value. This is a crucial observation. Because the economy is often taken as an important, if not decisive, indicator of a country’s health and wealth. This can lead to a distorted picture, because ecological and socio-cultural values are not taken on board. Their economic value is considered to be negligible. The upshot is that what is considered to be progress according to economic yardsticks may well be the reverse according to social criteria. This insight has led to growing criticism of the manner in which the Gross National Product (GNP) is measured, and particularly the conclusions attached to this valuation. The failure of our valuation principles to take negative effects into account raises key questions. Why are these negative external effects not valued as such? And why do these play no role in decision-making processes?

Rationality may be at the heart of our economic system, but what are the underlying values? As we saw, many matters that are considered insignificant (i.e. valueless) within the economic system are considered significant (i.e. valuable) within society at large. This particularly concerns ecological and socio-cultural values. The economic system takes a blinkered view of society. A few examples will illustrate this. Suppose a large number of employees suffer a burnout due to overwork and are unable to take part in the production process for six months while going through counselling at specialized agencies and institutions. You might think that this would be bad for the economy and would consequently depress GNP. The reverse is the case. Because the company must take on new staff to keep up production while healthcare revenues rise due to increased demand (from the overworked staff). Another example. The damage that a polluting company causes to its immediate surroundings is not included in GNP. If nature deteriorates, this does not decrease GNP. In fact: it may even increase GNP. Because the government may commission a study into the negative impacts. Based on the outcomes of this study, the government may then oblige the polluting companies to take measures to improve the quality of nature. If the company considers these too costly, it can enlist the services of legal advisers to challenge the provincial or municipal decisions in court. This means more work for the courts. In addition, the government must ensure that the imposed measures are actually carried out and must engage compliance officers for this purpose. But compliance issues are often complicated, which means that the staff needs special training which, luckily, can be obtained from specialized agencies that have sprung up in recent years to provide precisely this service. All these steps create new employment and thus help to raise
GNP. In other words: the deterioration of nature due to economic actions does not reduce GNP, but can actually increase it.

Evidently, economic growth does not automatically lead to greater prosperity in real terms. But we can go yet a step further and consider the relationship between prosperity and happiness. On closer inspection, this relationship too is not as self-evident as it might seem. Veenhoven, who has described this relationship, asks some interesting questions. The connection between wealth and happiness is not linear; in fact, above a certain level of prosperity, the connection is weak or even non-existent. A wealthy person may worry constantly about his investments. Heavy losses on the stock exchange can distress people, even though they still have more than enough to live comfortably. Above a certain level, wealth is no longer a means to buy goods or services that would otherwise be beyond reach, but a measure of one's success compared to others.

Another aspect is our tendency to objectivize happiness. We make a list of items, such as possessions and conditions, and then assess a person's happiness according to the number of boxes they tick on the list. We could, for instance, look at a person's health. If the person in question has never had complaints or has always received quick and effective treatment when ill, this could be taken as an indicator of happiness. A beautiful house, with the mortgage largely paid, a second car, and a holiday home in France can also be seen as factors contributing to personal happiness. However, such an approach may be alright for all sorts of impersonal surveys, but it hardly provides an accurate measure of happiness. For the simple reason that happiness is a subjective concept and depends on a person's individual feelings. You cannot define it as a neat list of items and then say that somebody is happy simply because they possess all the items on the list. People either feel happy or unhappy – ultimately only the individual can decide what happiness constitutes for them. Some divorcees are devastated because their marriage has broken down, others feel exhilarated at being released from the daily distress of a bad relationship.

So there are many matters that people experience as valuable, but form no part of the economic system. Nature, security and health are examples of this. Clearly, a purely economic approach excludes many matters that are of value to us – so the logical conclusion is that GNP is a flawed yardstick. Numerous activities within our society are valuable but are not expressed in GNP. Voluntary work is an example of this. As soon as volunteers stop providing care in their own time, professional support will be necessary, causing an increase in GNP. By contrast, no value is assigned to the voluntary work, for the simple reason that it is unpaid. A company with an environmental permit has the historical right to emit environmentally harmful substances such as ammonia. Such effects, however, are not deducted from the GNP.
calculation. Why not? This and similar questions are attracting increasing attention around the world. Stiglitz, Daly and, in our own country, Heertje and Van Duin are among those who have published about this subject. A related question is: if we measured growth in terms of sustainability (i.e. including all external effects), would we still conclude that our prosperity is growing? Or would we come to the conclusion that what we now call progress is actually decline?

In this light, we could draw up a social cost/benefit statement for Dutch agriculture which not only includes economic aspects, but also assigns value to the non-monetary socio-cultural contributions of agriculture – such as agriculture’s role as the custodian of regional identity and steward of the countryside and the impacts of intensive agriculture on water, soil and air and on environmental values such as nature and the countryside. Equally, we could ask whether land consolidation projects in the 1960s and 1970s which were one-sidedly aimed at increasing agricultural productivity were, in many respects, actually a step backwards when viewed from a broader perspective. Countryside elements that impeded an efficient use of modern agricultural machinery had to make way for progress. Meandering streams, for instance, were clinically canalized. Interestingly, such interventions are currently being reversed.

2.5 Government control

While the previous section placed the main emphasis on the substantive side of the sustainability problem, this section centres on the control issues. What are the main characteristics of the control structure as it currently operates? What are the consequences of these characteristics? Do we need change and, if so, what would the nature of that change be?

We noted that the economic system dominates the two other sub-systems. However, the suggestion that everything must make way for economic forces is too one-sided and incomplete. Governments have done a lot to protect valuable and vulnerable common goods. It would be wrong to claim that they had no eye for the effects of the economic system. In fact, they recognize that the limited economic perspective and flawed valuation principles pose a threat to social values. And have acted accordingly: numerous measures have been taken to offset detrimental social and environmental effects or strengthen valuable common goods that are vulnerable to economic forces. In the Netherlands, for instance, an extensive regulatory system places constraints on the economy’s playing field. In control terms, you could say that we have a hybrid system comprising a mix between the market and government regulation. Government policies impose restrictions where market forces have undesirable effects.
Government intervention has intensified considerably in the past years, but is not new. Laws to regulate employment conditions date back over a century. And in the past decades, the government has increasingly stepped in to protect the environment. Many measures have been taken to protect nature and to stop and reverse the pollution of soil, water and air. Amongst other things, licensing requirements were imposed on economic activities which were profitable from a purely economic perspective but damaging to the environment; and the creation of nature reserves was promoted, even though not strictly beneficial from an economic perspective.

From a control perspective the current situation can best be characterized as one where the nature of the economic system and its dominating position is putting both other sustainability sub-systems under constant pressure – so much so that there is a permanent need for intervention. The system does not naturally tend towards equilibrium, but requires permanent adjustment. The system is not self-correcting. The government must be alert to intervene whenever excesses and undesirable effects occur, if need be by imposing restrictive frameworks. So you could say that the current control structure basically combines two mechanisms: the market and government regulation.

In this light, the government’s role merits closer scrutiny. Is the government fulfilling its corrective role in a satisfactory manner? To answer this question, let’s first look at how policies are made. Government tries to influence the behaviour of citizens and organizations in many areas. Its authority to do so is not disputed, but exercising that authority in the real world is no easy matter. Social reality is complex and subject to constant change. In addition, government regulations must meet the requirements of good governance. We expect the government to treat all citizens equally, without preference or arbitrariness. Promises must be kept. Any changes in policy must be communicated well in advance, to give companies and citizens enough time to prepare for the changes. Another problem is that regulations can easily lead to undesirable effects. Companies and citizens can think up ways of evading taxation or making improper use of subsidies. So rules must be constantly adjusted and updated to remain effective. The government must also take care to ensure that its rules do not infringe on any rights and are drawn up according to the prescribed procedures. Rules that fail to meet these requirements have no legal force. In short: preparing and enforcing regulations is a complex business. Every aspect must be clearly defined in terms of purpose, scope and applicability.

Government policy thus presupposes order. The complex and constantly changing social reality must be brought into line by means of clear and effective policies. This calls for precision. Most laws and regulations start with a long list of definitions providing a detailed description of what exactly is meant by the phrase ‘within the
meaning of this regulation’. Situations which in practice fit the terms of the definition fall within the regulation; all others are excluded from its scope. In this manner government defines social reality in terms of formal legal frameworks. Though this social reality is multi-faceted and subject to multiple interpretations by citizens, this is irrelevant from a regulatory point of view in which only the government’s formal definitions count. The government’s power is thus effectively the power to define and the power to impose its definitions on society through its policies.

Besides this, policy-making is a self-perpetuating process, where one policy invariably leads to another, either in response to jurisprudence or because the measures are ineffective or counterproductive or because the circumstances have changed. The more policy measures are taken within a specific domain, the less room for manoeuvre there is for radical changes of policy. In this way, the scope for redirecting policy becomes limited. Changes cannot be made quickly and must be introduced via transitional arrangements. The government thus steadily becomes the prisoner of its own policies, where existing policy stands in the way of new policy. The government is thus constantly biting its own tail. As a consequence, systems and organizations lack resilience and are unable to respond alertly to the changing environment.

And there is more. We saw that every policy measure is based on definitions. These determine how social reality is interpreted ‘within the meaning of the regulation’. As a result, the regulation fails to address all the problems that exist in reality. And the solutions are similarly flawed. Parties eligible for subsidies must meet strictly defined criteria. This is understandable, but it also means that brilliant solutions are sometimes not brought to fruition because they do not meet the criteria. The consequence is that regulation ‘by definition’ involves reduction and, hence, exclusion (Wagemans). Reality is reduced to a manageable world that is susceptible to regulation. This is illustrated in abstract form below: [government perspective; society]
In the above illustration, area a is the meaningful area within a given regulation. Situations, problems and solutions fall within the government’s formal perspective as defined in the regulation. Against this, both areas b remain outside the regulation’s scope. Situations in these two areas may be highly relevant to citizens, but are meaningless to the government. They fall outside the government’s perspective and are therefore ‘by definition’ out of scope. The manner in which the government defines a problem may also not correspond with the public’s perceptions. Policy thus invariably imposes a degree of standardization that is at odds with reality. Traffic safety is a good example of this. Whether the government sees a traffic situation as safe or unsafe depends on the definition of traffic safety. Various factors are considered, such as the number of passing vehicles, the number of accidents causing serious injury and road visibility. On the basis of these factors, the government may conclude that a situation is safe even though the public sees it as extremely unsafe. The public’s opinion is based on experience, while the government makes its assessment on the basis of definitions and established policies.

A further problem is that a situation can be defined differently in different regulations. One historic example concerned the question whether a poplar meadow should be treated as a grass field with trees or as a wood with grass between the trees. The answer to this question can be decisive in determining whether the land is eligible for subsidies or subject to agricultural restrictions.

These policy-making aspects are highly topical in relation to rural renewal. Land use plans for rural areas usually outline in detail what activities are permitted and what rules must be observed. Besides these restrictions, there is also a seemingly endless
stream of jurisprudence which imposes further constraints on the scope for taking innovative initiatives in response to changing circumstances.

From a control perspective, the described system is not sustainable. It lacks a self-correcting capability and requires permanent adjustment. The system is not internally (‘systematically’) in balance. The economic sub-system’s in-built tendency to grow puts ecological and socio-cultural values under pressure, thus effectively compelling the government to formulate additional policy when new developments make this necessary. Faced with the market’s relentless pursuit of expansion, the government seeks to mitigate the resulting excesses with a system of do’s and don’ts – and this regulatory proliferation goes hand in hand with spiralling transaction costs. Clearly, this situation cannot continue. So we now face the question: is it sufficient to merely adjust the hybrid ‘market and regulation’ system (e.g. by giving regulators more power to rein in the market, by passing on pollution offset costs to consumers, or by launching ‘buy organic campaigns’ and thus compelling farmers to adopt sustainable production methods) or is a radical renewal of the regime itself required?

Put differently, our policy system has slowly but surely been credited with the attributes of an ideal system. Our expectations are so high that the system can no longer live up to them. So must we change our expectations or improve the system in such a way that it can meet our expectations? In the latter case, a great deal of effort is put into altering the system, but the system itself is not questioned. This is the prevailing tendency at present. A whole raft of adjustments are being made within the policy system. Though it has been repeatedly shown that such changes are ultimately ineffective, the conviction that the problems can be solved in this way is evidently so deep-rooted that few are willing to embark on a more radical course towards an entirely new regime. An alternative to making changes would be to conclude that our expectations are unrealistic and need to be modified. This too leaves the system intact. This approach, however, is not popular within our political system. We will return to this later. The third route is to change the entire system, i.e. instead of making changes within the system, we change the system itself. This is a radical and difficult step, and is discussed in greater detail in section 2.8, which takes a more detailed look at the functioning of our political system.

The described policy-making mechanisms are clearly visible within agricultural policy and more generally within rural policy. Entrepreneurs are constantly complaining about the growing regulatory burden and about the fact that government policy is impeding economic activity. In addition, renewal projects often conflict with government policy or fail to meet the strict criteria laid down in the subsidy regulations. The ultimate consequence can be that government policy no longer facilitates innovation as a driver of change, but merely permits innovation that fits
neatly within its own policy parameters. Government instruments then become the end rather than the means – and instead of government serving society, society serves government as a confirmation of the latter’s limited perspective. In other words, the relationship between government and society has been reversed.

2.6 Organizations

If you have to choose between doing a task in an organized or disorganized manner, the choice is clear. Agreeing in advance who does what and when is better than adopting a haphazard approach. That’s why organizations clearly allocate duties and responsibilities. An organized approach is more efficient, particularly for complex tasks involving many parties. Close coordination avoids duplication or, worse, people undoing each other’s work due to miscommunication.

But we now know that organizing things in practice is more difficult than it appears at first sight: not everyone does what they are supposed to do, disagreements and tensions make people uncooperative, misunderstandings cause confusion and so on. The problem is even greater when the organizational method itself is flawed. Every form of organization is basically a simplification. Complex problems are simplified so that they can be tackled in an organized manner. Every form of organization involves such a reductive process. This reduction is functional because it enables us to benefit from the advantages of an organized approach. But reduction also, by definition, entails excluding matters. We have difficulty coping with situations and problems that are less susceptible to an organized approach. By simplifying complex situations to manageable proportions, we reassure ourselves that we have a grip on the situation – but that grip is actually more tenuous than we like to think. We fail to acknowledge the complexity of the situation. We deliberately close our eyes to what we cannot control and justify this by telling ourselves that the advantages of organization (i.e. simplification) are greater than the disadvantages. But the situation is different when we are confronted with serious problems that do not fit easily within our organizational framework – when the way in which we are organized is actually an obstacle to finding the solution. We are unwilling to address such problems, because they do not fit in with our ready-made organizational concepts. They elude our understanding.

Another sticking point is that every form of organization makes the world static. We need to see a big picture, with clear frameworks. So we create static structures that subsequently resist change. The world may be complex, but imposing a form of organization upon it gives us a reassuring sense of control.
With this in mind, let us take a closer at the trend toward economies of scale in the past decades. The reasons for this trend are understandable. Economies of scale enable us to work more efficiently. The bigger the organization, so it was thought, the greater the advantages that could be achieved. However, we also know from experience that bigger organizations are more difficult to manage than smaller ones. Bigger organizations need tighter control structures, better coordination and more sophisticated information systems. Knowledge intensity is another tricky aspect from an organizational perspective. Large organizations tend to have more specialized knowledge. But knowledge ages quickly and the acquisition of new knowledge is a continuous and fast-moving process. It is hard to keep up with all the latest developments. Complex systems demand complex control systems – because complex systems are not easy to monitor and oversee. So there is a tension between the advantages and disadvantages of economies of scale. But until now, the advantages have received more attention than the disadvantages. We live in an age where modern technological systems enable us to rapidly process and disseminate information all over the world; but at the same time, we are apparently unable to construct systems that are capable of transparently allocating responsibilities.

The drive to benefit from economies of scale and the need for control both encourage standardization. Our ability to deal with variety and change is, by definition, limited. Standardization can easily lead to more bureaucracy. The demands made on the organization increase as the organization grows. Inevitably, there comes a point where the disadvantages outweigh the advantages. Things slip out of control. Organizing and reorganizing demands more and more attention. The organization becomes the end instead of the means.

Such processes are continuously at work, both in the public and the private sphere. Ronald Coase studied internal processes within industry. In our economic system the business firm takes centre stage. Coase pointed out long ago that the image of a business firm that is purely led by market forces is not very realistic. It is too simple to assume that the market determines the functioning of a business firm. For one thing, a firm needs internal coordination and this does not take place of its own accord. The supply and demand mechanism only works to a limited extent within a business firm. Instead of discussing and negotiating each operation that needs to be done, it is much more sensible to make certain permanent arrangements (i.e. who must do what and when?). No matter how market-focused a business firm is, it cannot simply be driven by market forces. For instance, it is better to define duties in a job description than to discuss each day what each individual employee is required to do. Similarly, it is also beneficial to lay down routine procedures in a protocol. Such institution-wide agreements are more efficient than negotiating individual arrangements time and time
Coase published these insights as early as 1937, but they have only received the attention they deserved in the past decades.

Another point concerns the systems underlying our organizations. Organizations spring from the conviction that an organized approach is the best way to tackle a problem or take advantage of an opportunity. It follows that when radical developments alter the nature of the problems, then the existing organizational structures are no longer necessarily best-suited to resolving these problems. Yesterday’s organizations are not automatically equipped to address tomorrow’s challenges. There is always the risk that our current organizations are based on old divisions that are no longer relevant. Let’s take agriculture as an example. One of the current challenges is to seek a balance between agriculture and nature. Many perceive the relationship between agriculture and nature as a problem. There are calls to integrate the two. But so far progress in this direction has been slow. Finding sustainable solutions costs a lot of time and energy. It is one of the most far-reaching and urgent policy themes. But perhaps we could realize a breakthrough by recognizing that our existing organizational structures impede structural solutions and actually serve to perpetuate the problems. Nature and agriculture are both highly organized sectors. The efforts of agricultural organizations and nature organizations are understandably aimed at promoting the interests of their own sector. An added problem is that the organizations of both sectors have a big say in policy processes...because, as representatives of their sector, their support is necessary to get policies accepted and implemented. In other words, the current structure and context make it difficult to move towards cross-sector solutions and to invite, if not force, parties to enter into constructive negotiation. Instead, we currently have a distributive negotiation set-up (Aarts, Van Woerkom) where one party wins and the other loses. Problems are not solved. The best you can hope for is a negotiated settlement that all parties can live with for a while before fresh grievances lead to the next round of negotiations. Our current form of organization inevitably leads to solutions in the nature of compromises.

This problem becomes particularly evident in situations where radical change is called for. Existing organizational structures are then part of the problem rather than the solution. For instance, to achieve a genuine integration of agriculture and nature - and move towards an agricultural system that promotes nature, countryside and the responsible management of water, soil and air - we need to reformulate interests and realign existing positions. Fundamental renewal is difficult, if not impossible, to realize on the basis of established positions and interest structures. Negotiations are typically aimed at seeking solutions that are workable. The negotiating parties try to find the best conceivable solutions given the existing conflicts of interest. Unfortunately, this is rarely the best way to find genuine and lasting solutions. The outcomes are merely
compromises designed not so much to solve problems, as to make them tolerable. This, in itself, is a useful mechanism. Most systems contain inherent tensions and conflicting interests, so it is important to have decision-making or pacifying mechanisms that prevent such conflicting interests from causing disruption or paralysis within the system. However, when radical change is called for, compromises are not enough. It is no longer sufficient to make adjustments within the system: the system itself must be changed. New themes and challenges must then be formulated, allowing new coalitions to form around these new issues. In such cases, the existing structures must be dismantled as a necessary step to move towards renewal. Unless they are removed, the traditional models, which have outlived their usefulness, will stand in the way of change.

Problems not only occur within organizations, but also in their relationship with the environment. Tensions can arise between the organization and the outside world. Self-referentialism is a well-known phenomenon that can cause organizations to lose touch with their surroundings and prevent them from responding to changes. Whilst self-referential organizations fail to adjust to their surroundings, they often simultaneously develop a strong ability to survive regardless of what happens around them. This can occur in numerous ways. External developments can be interpreted in such a manner that there is no need to adjust. Or they can blind themselves to that need. They simply don’t see the growing gap between themselves and the world around them. Some organizations can afford to do this more easily than others. A commercial organization cannot ignore market developments with impunity. If they continue to offer the same products despite changing consumer preferences, they will soon lose their market. Falling sales will simply force them out of business. But in other situations the organization may have a more dominant relationship vis-à-vis its environment. Government organizations are a good example of this. Take, for instance, a government organization responsible for granting licences or subsidies or for imposing taxes. Even if the organization has become ineffective and inefficient, it can still continue to survive for a long time. Because any moves to change its structure or disband it altogether must be preceded by a long-drawn-out political process, the outcome of which is by no means certain. More often than not, cosmetic interventions are made to create a semblance of action while leaving the underlying system – and the associated problems – intact. The fact that actors in a system normally have no interest in systemic changes also encourages self-referential mechanisms. Because systemic changes usually lead to institutional reform – which, in turn, can mean job losses, the need to develop new skills, the abolition of departments and, inevitably, insecurity about the future. Which nobody finds an attractive prospect. In this way, institutional systems often tend to reproduce rather than resolve problems.
Globalization leads to specific challenges in the institutional field. A global economic system calls for structures and institutions on a global scale. But the institutional structure has failed to grow with worldwide production and trade structures. Admittedly, numerous organizations do exist at global level, but none have strong decision-making, supervisory and enforcement powers. There is no recognized authority with a mandate to take corrective action when required. At global level, parties must rely on amicable agreement. If one country thinks that others stand to benefit more from the compromises reached, it can choose to opt out and pursue its national policy instead. This is an extraordinarily weak basis for forming and pursuing common policies, and it is particularly disadvantageous to the cause of sustainability. Sustainability cannot be left to voluntary agreements, but there is still no global authority empowered to take corrective action against non-compliance. A second point concerns the fact that an institutional structure is necessary to derive full benefit from the advantages of globalization. It is true that organizations are active on a global scale in many sectors, including agriculture and food. But the greater the distance between the parties and the greater the number of parties involved, the more difficult it becomes to guarantee quality and health. This applies in particular where conditions vary strongly between the diverse parties. One example of this concerns the use of modern technology. Computers could be of great use in monitoring activities and processes, but if many of the producers are illiterate, such resources cannot be harnessed to best effect.

2.7 The human scale

Rationalization and modernization are often blamed for destroying the human scale in society. The efficiency gains achieved through scale increases were won at the expense of the relationship between the individual and the organization. The bigger organizations become, the more interhuman contacts are regulated by procedures and protocols. In this connection Eyskens says that modern societies are governed by an abstract authority with no clear personality, identity or face. In terms of mutual relationships, the two currently dominant control systems, namely the market and government regulation, are both characterized by anonymity. We will take a closer look at both forms of control.

Anonymity is clearly a characteristic of the market system. Adam Smith famously spoke of the ‘invisible hand’ of the market mechanism: the mechanism operates but is neither visible or tangible. It does its work irrespective of the identity of the transacting parties. In fact: the essence of the free market is that I, as consumer, can decide to buy from one supplier today and from another tomorrow. Buyer and seller do not need to enter into a lasting relationship with each other in the market: the
relationship remains limited to the transaction itself. Once the purchase has been concluded and the transaction completed, the relationship ceases to exist. Ideally, the market mechanism always creates an equilibrium between supply and demand. The market needs no policing. However, as we know, the ideal does not always correspond with reality. The market mechanism has shortcomings. Market disturbances are always possible, but this is not our main concern here. What we want to explore is that in its purest form the market does not require a relationship between transacting parties. This applies to the market for goods and services, but also to the ownership of companies. Shareholdings do not entail a long-standing relationship between the company and its shareholders. Efforts to promote shareholder loyalty, such as by making the size of the dividend dependent on the period that the shares are held, meet with legal problems. So even ownership can be anonymous. This is clear at shareholder meetings, which usually only a small proportion of shareholders attend in person. The ownership of a company is spread all over the world and is constantly changing hands.

Agricultural ownership is organized differently, but one of the most important relationships – between producer and consumer – mostly also has all the characteristics of anonymity. In a marketplace comprising millions of producers and billions of consumers, it is difficult for the two to get close. Relationships only get a face in small-scale initiatives at local and regional level where real connections are established between producers and consumers. This is virtually impossible in worldwide food chains, even if it were considered desirable. Food chains consist of large numbers of producers supplying even larger numbers of consumers with whom they have neither ties nor relationships. What’s more, the ongoing specialization in trade, transport and processing is constantly adding new links in the chain.

Anonymity is also a characteristic of government control. In a sense, it is even a deliberately pursued goal. One important principle in government policy is that policy rules must be implemented without regard to individual persons. Rules and their implementation must be objective and anonymous. In so far as personal conditions need to be taken into account, clearly defined criteria must ensure that this too takes place in an objective manner. The aim is to reduce civilians to impersonal objects who can be regulated at will. Objectivity is key, and this automatically leads to standardization. As a consequence, policy is often stripped of a human dimension.

Earlier we said that policy-making ‘by definition’ involved reduction. Not all issues that are relevant to society are relevant within the policy domain. This raises the broader question as to how receptive government is to issues that matter to civilians. It basically entails that government is only receptive to issues that are meaningful within its own formal perspective. The reverse also applies. Issues that government considers
extremely important, such as legal questions regarding powers and procedures, are often insignificant to citizens. This explains why citizens regularly call attention to issues that affect their everyday lives, but which the government cannot solve for them. For instance, if an industrial plant causes nuisance to local residents, the government can only act if the operator is breaking the law. If there is no infringement of the rules, the government’s hands are tied. Measures can only be enforced when rules are breached. Added to this, the government applies its own extremely complicated definitions and terminology that are difficult to understand without specific legal expertise. Issues that are relevant to citizens usually need to be ‘translated’ in order to be made meaningful within the government’s frame of reference. Applicants for subsidies need to be well-versed in the intricacies of subsidy regulations.

The upshot of the above situation is that the public no longer sees the government as the representative of a common interest. The relationship is dominated by anonymity and alienation. Within our structures, individual citizens no longer know whether they are part of the solution or part of the problem. And in so far as they do see what part they play, the structures are so large and complex, that their contribution to solutions is perceived to be insignificant or, even worse, cancelled out by the irresponsible behaviour of others. Put differently: the manner in which the system works tends to encourage indifference rather than commitment. Faced with the insensitivity of systems, citizens respond in kind. A government that treats citizens coldly and impersonally invites calculating behaviour on the part of these same citizens. However, the differences in the frames of reference of the government and citizens not only result in problems and miscommunication, but also give citizens a handle to exert influence. Citizens who are protesting against a major project (such as a motorway through the countryside) but find no sympathy for their objections can latch onto a protected species to get their way, even though the protection of that species is of little or no importance to them. Government rules can give civilians great obstructive powers. The objections are simply reformulated and placed in a different context – a context that makes them relevant to government so that they carry legal weight. Basically this is a shadow boxing exercise between citizens and the government, and communication between the two becomes more and more manipulative and calculated for effect. Citizens translate their issue which is not meaningful to the government into an issue that is relevant to the government, thus forcing the government to take action. On the one hand the government is not receptive to complaints from citizens, on the other hand sensitivities exist within the government domain which are relatively meaningless to citizens. And this gives civilians a foot in the door. The same kind of thing happens in criminal law, where even a minor formal error on the part of the Public Prosecutor can cause a serious offence to go unpunished.
2.8 The role of politics

In a constitutional democracy, you might expect the political system to be capable of correcting systemic problems. This is possible if the political system is capable of picking up early warning signals – signals, for instance, that the government is out of touch or that its policies are ineffective or even counterproductive. But the political system does not necessarily play this role. It too is marred by mechanisms that prevent it from having an open eye for reality. This, in itself, is understandable. As noted before, changing policies is a complicated process. The government often has limited scope for altering the rules. In many cases they are prisoners of themselves and therefore unable to take adequate action when a system fails to deliver the envisaged results. Systems can develop a great capability for blinding themselves to problems and perpetuating stale routines. There may be a lack of will to identify and analyse problems in sharp detail when the outcomes might compel unpopular measures. Inconvenient signals are brushed aside as insignificant. Problematic issues are trivialized to avoid the need for incisive action. Such mechanisms are at work both within the policy-making system and the political system. In the section about the functioning of the government and policy-making processes, it was already noted that the government only recognizes social reality in so far as it fits within its own definitions. Situations or perceptions of situations falling outside these definitions simply do not exist in the government’s book. As a result, many social issues that matter to civilians remain outside the government’s perspective because they are not significant ‘within the meaning of the regulation’. The government thus, as it were, creates its own reality which it then seeks to steer in the desired direction by means of instruments such as regulations.

The political system may also simply be powerless to tackle problems. But political actors are rarely willing to admit to such powerlessness. They are keen to keep up a ‘can-do’ image. Politicians who are frank about their limitations don’t go down well with the electorate – and so, rather than telling the truth, they feed unrealistic expectations. Fictions are created – functional fictions that make unmanageable situations manageable, or at least acceptable. These fictions constitute the keystone of our system. By creating this make-believe world and pretending it is ‘real’, we can avoid the confrontation with reality. If that make-believe world were unmasked, the entire system would be open to question. So instead of undermining our system, we prefer to keep the pretence intact. The government thus operates in a virtual reality of its own making. Policy-makers reduce society to a world that is susceptible to their rules and regulations. Researchers reduce complex issues to subjects they can research. Judges and lawyers reduce conflicts to cases that are meaningful in legal terms. But the grand masters of this reductive process are the politicians themselves. The fact that the government is capable of enforcing its own definitions plays an important role in
this respect. Fictions are therefore held up as ‘real’ and thus remain an important building block within our policy-making system and political system. Our control systems no longer deliver what they claim to deliver, but that is no reason to question the underlying principles. Instead of questioning the control systems themselves, we confine ourselves to stopgap measures such as changing and adding rules.

Another important aspect to be considered is that not everyone has an interest in reformulating themes that have a bearing on fundamental social issues. We already pointed out that problems are institutionally embedded. Civil society organizations and special interest organizations not only have a strong position within policy-making processes, but also maintain strong relationships with political parties. The fact that there are sectoral organizations representing the specific interests of agriculture and nature entails that problems enter the political domain as specific sectoral issues and are adopted as such by political parties. These then find their way into party manifestos and are given a voice in party standpoints. Vested interests thus have an established place in the political debate, and this further limits the scope for reformulating problems and bridging the gap between opposite views.

2.9 Summary

The presented analysis leads to the conclusion that, in its present form, our economic system is severely flawed and is consequently a major contributor to the sustainability problems currently confronting us. Demand-led control, for instance, leads to environmentally unsustainable consumption levels. There is a tension between short-term profit and long-term sustainability. We also pointed to the compulsive growth syndrome within the economic system, which causes an internal imbalance within the system. In addition, negative effects are not expressed in the cost price. These are conveniently passed on elsewhere. Values that we consider important in our society are under pressure. The cause of this can be traced back to valuation issues. The economic system has a limited basis for valuation. What is progressive in economic terms can be regressive in terms of well-being and happiness. A final sustainability issue stemming from our economic system concerns the problems surrounding the distribution of wealth.

So the internal dynamics of the economic system contains flaws, but the relationship with the environment is also problematic. As we saw, the system of dependencies provides all sorts of opportunities for passing on costs. As a result, the polluter does not always pay. The weakest party foots the bill and there are imbalances in terms of costs and benefits. This is not necessarily what the system sets out to achieve, but it is the system’s factual outcome. The economic system dominates both other sub-systems.
It is also important that relationships within the economic system are characterized by anonymity. The market mechanism operates anonymously, which makes it difficult to assign responsibilities. This means that the system is not self-correcting and the mechanisms within the system actually tend to aggravate the problems. This leads to the permanent need for governments to intervene and avoid, or at least mitigate, undesirable effects. But, as we saw, even in this role the government's powers are limited.

The end result is that the system no longer operates in accordance with what is considered socially desirable and valuable. The system has become detached from its own values. This problem, incidentally, not only occurs in the economic system. In general, it is fair to say that our control systems no longer serve their original purpose. Such problems cannot be solved by changing the substance of individual policies. It is not a question of implementing a more relaxed exemptions policy, tightening up standards, introducing new subsidies or raising taxes. The problem goes much deeper. There is something structurally wrong in the way we organize things. ‘Systematic’ errors are made because there are flaws in the fabric of our organization and control systems. This also explains why the problems are so persistent. The manner in which we are organized is an important contributor to the problems. The underlying institutional structure leads to reproduction. We are organized around problems from the past, instead of around the challenges of the future. Put differently: we are organized to perpetuate problems. We are repeating the past, including all its attendant problems, instead of shaping the future. The problems are institutionally embedded.
3. Towards transformations and solutions

3.1 Introduction

In the last chapter we presented a system analysis. Now we must look for a system innovation agenda, which must obviously link up with the conclusions from Chapter 2. In this chapter we want to formulate the innovation tasks in sharply defined terms, while also identifying possible solution approaches. What transformations are necessary? What promising solution approaches can enable us to avoid systemic errors? Our aim here is not to present ready-made concepts for immediate implementation, but to put the innovation tasks in sharper focus, thereby facilitating the formulation of concrete and targeted system design tasks.

We recall that our basic premise is that sustainability problems are, at heart, of an institutional nature. So it is not sufficient to devise solutions which seem perfect in substance but whose implementation is not supported, and may even be obstructed, by the existing institutional set-up.

The challenge is to design a self-correcting system. Given our assertion that the current system encourages unsustainable behaviour among the participants, the challenge is to design a system where it is in the participants’ interest to contribute towards a more sustainable society. Interventions at operational level are not sufficient to achieve this. The necessary changes are of a far-reaching and fundamental nature. Such changes cannot be realized through realignments and restructurings within existing systems. The foundations themselves require change. New foundations are needed, which raises the question what the basis should be of a new system. This concerns both the economic system and the policy system. Both contain systemic problems that cannot be solved through realignments within and between these two forms of control. In addition, we must also avoid placing any trust in the institutions and institutional structures that underpin these systems.

To explore these new foundations, Section 3.2 starts by looking at a new value and valuation base. Next, we turn to the dependence structure between the three sub-systems of sustainability. This is the central focus in Section 3.3. As we saw, a new valuation base and a new dependence structure were two important reasons why the overall sustainability system is not in balance and requires permanent adjustment and correction, as is evident from the continuous government interventions. We will
discuss both points separately and identify the transformations that can remove these systemic errors and create systems that are self-correcting. We then proceed to Section 3.4 which goes into the consequences for the economic system. What do a new valuation base and a different dependence structure between the three sub-systems mean for the internal functioning of the economic system? What changes in the economic system are necessary and offer potential for the future? We saw that demand-led control has disadvantages from the sustainability perspective. So can things be done differently? Is there an alternative? How can undesirable connections that maintain and even exacerbate the problems be removed? Such changes will have consequences in terms of control. These will be discussed in Section 3.5. Can we conceive of a different control model? If so, what would that look like? Section 3.6 centres on innovations in the organizational field. We said that the current institutional system has a divisive effect and that it is built around entrenched divisions that are no longer relevant. But what new themes can create new connections? And how must these new connections be given shape? What must the new forms of collective organization look like? And how can these be equipped to take responsibility for sustainability? In what underlying institutional frameworks must these responsibilities be embedded? What must new concepts relate to? The proposed transformations are radical, and also have consequences for the role of government. In the current circumstances, the government has a wide-ranging part to play in the field of sustainability. So there is every reason to give this aspect close consideration. What is the government’s position in the new system? What does it mean for the role and functioning of the government? Such questions are raised in Section 3.7. In Section 3.8 we look at the role of politics which, after all, plays a dominant role in a constitutional democracy. What do the proposed changes mean for the political domain? The fundamental nature of the proposed changes is discussed in Section 3.9. What is needed is nothing less than a different perception of mankind. Finally, we sum up the outcomes in Section 3.10.

3.2 From interests to values

We noted that many parties have an interest in perpetuating the existing system, despite all its drawbacks in sustainability terms. This, of course, applies in particular to parties who take up a central place within the system. Changes are permitted provided that, and in so far as, these leave the structure intact. The system reproduces itself, including all the attendant problems. Change is necessary in the relationship between what is economically valuable and what has ecological and socio-cultural value. We also noted that the valuation principles are flawed. The economic system takes a limited approach to value and ignores the value of essential common goods. In fact, these non-economic values are under pressure from economic forces. And that is
basically the core of the sustainability issue. So the required transformations are transformations at the level of values. Put differently: we need a new valuation base, where everything is assigned its true value.

Putting values at the centre of your approach automatically raises questions about the relationship between morality and economy. The economy is sometimes claimed to be a value-free science. As a science, economics merely describes consequences and differences between alternatives. The decision-making itself is beyond the realm of this science. A similar view is expressed in the assertion that the market has no moral - because the market mechanism operates independently, has its own dynamics and respects no moral boundaries. The underlying reasoning is that all actions are legitimate provided they observe the rules of the system. As long as you adhere to the rules, you need not account for your actions. The system does this for you. But a different situation arises when a system leads to undesirable outcomes. When systemic changes are necessary because the system no longer delivers the intended results, then conforming to the rules is no longer good enough. By invoking the system to justify your actions, you evade your responsibility for change. The system has lost its legitimacy and, consequently, no longer has any legitimizing power. To take this a step further: in a situation where the system causes rather than resolves problems, stepping outside the system may even be the right course of action.

The economic system as we know it is founded on strong fundamentals. Rationality, efficiency and profit all seem unassailable principles. And challenging such principles is a radical step. But in the current situation there is every reason to take this step. Economic forces are leading to situations that are not only highly undesirable but even conflict with some of our most essential values, such as a fair distribution of income, equal opportunities, and nature preservation. These are all values that we want to protect, but which are threatened by pressure from economic forces. Viewed in this light, the assertion that the economy is value-free is merely a standpoint, and no more than that. It also happens to be a very convenient standpoint, because it provides a pretext to refrain from action. But we reject it. For it is based on a narrow definition of what forms part of the economic system. And we do not share this narrow definition. Because when the economic system leads to serious problems without being held responsible for these problems, the system is left intact and the scope for interventions is severely limited. The system is thus immunized against radical change. We disagree that the system is an objective machine that cannot be held accountable as a prime contributor to the problems. Instead, we challenge the economy’s valuation base and suggest that it should be broadened to include valuable common goods that are currently left outside the economic system.
In the current situation, the government takes responsibility for essential common goods that are assigned no value within the economic system. The economic system’s narrow conception of value may favour economic profit, but it also leaves others to pick up the bill for the costs of its negative impacts. Governments have embraced this issue. The challenge is to broaden the valuation base of the economic system itself. This is an argument in favour of a transformation that leads to an economic system which ensures that we assign value to what we truly consider of value. Sustainability is the guiding principle in this context. This has consequences for the cost structure. Environmentally-unfriendly production is discouraged because negative impacts on the environment lead to higher costs. Vice versa, positive effects on the environment and other common goods generate higher revenues. We need a measure for growth and development that assigns everything its true value. The health and wealth of society will then no longer be expressed in the size of the per capita Gross National Product, but will include goods that are vital for the public well-being which are currently ignored in GNP. And the reverse is also true: the disadvantageous effects of economic activity which damage the quality of society, but which are currently excluded from GNP, must now be taken into account.

### 3.3 Reversal of dependencies

We said that there is a need for systemic change, and that this must be mainly aimed at making the overall system self-correcting. This self-correction is currently lacking because, as we saw, the economic system dominates the two other sub-systems. The logical conclusion is that we must take the system of mutual dependencies between the three sub-systems as our starting point. This is possible by reversing the dependencies within the system. What is vulnerable within the current system becomes the measure for economic progress. This entails a radical change of system which challenges many things that are currently considered self-evident, such as the need for economic growth. The growth of the economic system will then become dependent on the scope offered by the two other sub-systems. In addition, effects of economic growth will be measured more broadly.

The proposed reversal is shown in the following diagram: [reversal of dependencies, economic sub-system, ecological sub-system, socio-cultural sub-system]
Such a reversal in the mutual dependencies is a radical step and can only be achieved through radical renewal and change within the economic system. It demands an economic system that supports instead of endangers sustainability.

3.4 A new economic system

The above leads to an economic system that is not driven by evermore efficiency to produce more cheaply, but to a more value-based system: a system that assigns and adds value to a broad set of common goods.

The basic principles for designing the new economic system can be summarized as follows:

- The overall system must be self-correcting in the field of sustainability. Dependencies need to be reversed. The economic system must be repositioned.
- A different valuation base is required – one that assigns value to what is considered valuable.
- The costs of external effects are borne in full by the causer (the polluter pays)
- No costs are passed on to others, whether in time or in space.

This systemic change entails that what we consider of social (i.e. ecological and socio-cultural) value determines the scope for economic development. Though this involves a radical transformation of the economic system, it is based on an insight that is far from new. About 150 years ago, one of the founding fathers of economic science, John Stuart Mill, already advocated a stationary economy. He predicted that the period of
technological renewal and growth would be followed by a period in which the earth could no longer cope with further expansion. From that moment onwards a stationary state would exist. He expressed the hope that mankind would be sufficiently astute to recognize when the time had come to transform from the growth phase to the stationary phase. With hindsight, we have to conclude that we have not been terribly successful in this respect.

So what are the basic elements or starting points for our new economic system? First of all, we should stress that there is no need to question the pursuit of efficiency in itself. Efficiency can also lead to more economical use of raw materials and thus contribute to sustainability. But the way in which we have organized efficiency does need to be changed. In the current system, we increase the efficiency of some relationships while simultaneously reducing the efficiency of others. We solve one problem while creating new ones at the same time. This process is allowed to continue because the beneficiary of the advantages of greater efficiency does not suffer the disadvantages (including a reduction of efficiency in other areas).

Another important element is that the intensity of economic activity must be adapted to the environment’s capability to support this activity. This constitutes a radical change from the current system. It may, for instance, mean limiting the freedom of consumption to bring consumption back into line with the earth’s food-producing capacity. The demand-led economy will thus no longer hold sway, and the economic system will be liberated from its current compulsive growth syndrome. Such a systemic change will no doubt provoke predictable reactions. What are the employment consequences if we abandon the growth model? It’s a crucial question, particularly in times of high unemployment. Is a stationary economy a realistic alternative? Indeed, can we even afford to adopt a stationary economy? This invites us to take a closer look at the relationship between economic growth and employment – a relationship that is less obvious than is widely assumed. In the first place, the current system is characterized by the fact that growth is not aimed at creating employment. Job creation results from economic developments and not from entrepreneurial decisions to make investments to increase the number of jobs. As a matter of fact: many investments are actually made to save on labour. Technological advances are often explicitly aimed at improving labour productivity in order to save wage costs, reduce the unit wage costs and thus become more competitive. Admittedly, governments do make budgets available for the specific purpose of creating jobs, but the effect of these subsidies is limited. Experience shows that as soon as the subsidies disappear, so do the jobs. Basically, our economic system is pre-programmed to reduce the labour factor and thus actually contributes towards unemployment. As long as it pays to replace labour as a production factor with capital in the form of labour-saving technologies, serious question marks can be placed behind the relationship between growth and
employment. To change the relationship between economic growth and employment, it is necessary to change the remuneration structure.

There is also another reason for adopting a different remuneration structure. In a sector like healthcare, many complain that efficiency improvements are gained at the expense of quality. Faced with constantly rising labour costs, the pursuit of greater efficiency is perhaps understandable but it inevitably impairs the quality of healthcare, in which (inefficient) human care and attention plays such a central part. As a consequence, a drive to increase efficiency in healthcare can actually be counterproductive.

In a new economic system, employment is no longer the outcome of economic development; instead, economic development is geared to the availability of labour and is explicitly aimed at creating meaningful employment for everyone fit and able to work. This entails a major transformation. As the recent crisis has tellingly shown, the availability of capital in the current system plays a decisive role in facilitating entrepreneurial initiative. Availability of labour is a much less critical factor, particularly in times of unemployment. This relationship between labour and capital is ripe for review.

Besides assigning value to impacts of economic activities, we must change the way in which we value production factors. Let us take labour as an example. The starting point in the new system is that the remuneration must be geared to the contribution that is made to the wellbeing of society in a wider sense. The consequence is that the current sharp line of demarcation between paid labour and voluntary work is eliminated, or at least blurred. In other words: voluntary healthcare and other voluntary work becomes part of the new economic system. Unpaid work does not necessarily lack significance. This calls for a social system in which respect does not depend on whether people do paid work or receive benefits.

The positioning of the economic system will also change. In the current circumstances, the development of a society hinges on, and is dominated by, the economy: a healthy economy is synonymous with a healthy nation. An alternative approach would be to determine the ideal condition for a society and then gear the economy to achieving that ideal. In this way, the economic system can be made to serve society, instead of the other way around.

Such an economic system also entails a different role for the financial system. This will no longer be dominant in its relationships with other activities within the economic system; in the new situation, the primary function of the monetary system is to facilitate transactions within the economic system. The financial system no longer has
its own dynamics, let alone the strength to influence and even dominate the real economy. Besides being a unit of measurement, money will serve to facilitate transactions. Interest has the function of bridging the time gap. This applies both to investments and to expenditures. In this way, the economic system will once again be driven by reality. It will also limit the scope for all sorts of financial wizardry which seems to generate untold riches...until the bubble inevitably bursts, as was the case with the notorious pyramid schemes. Reassuringly, the new economic system is less virtual and therefore more transparent.

3.5 A new control model

In Chapter 2 we saw that there are currently two forms of control in the field of sustainability: the market and government regulation. A dynamic balance exists between the two: too much scope for the market leads to calls for a stronger government role, while too much government intervention results in calls for more market forces. The underlying interaction suggests that both forms of control have negative impacts, thus necessitating continuous adjustment. Market forces play a role within the economic system, while the government imposes restrictive frameworks on these forces to keep them within socially acceptable bounds. The government plays a corrective role in this sense. The current regulatory proliferation suggests that this role is becoming more and more important. The need for corrections is mounting, partly because of the growing excesses of the economic system and partly because of increasingly rigorous social attitudes as to what is, and what is not, acceptable.

‘Market or regulation?’ is a pivotal theme in politics. Some champion the market as the panacea for all ills, while others advocate more government intervention. The debate is ideological at heart, though the political answers tend to have the nature of a compromise. The ‘market or regulation’ question is a permanent fixture on the political agenda (and forms an important dividing line between political parties), but the recent financial crisis has made it more pertinent than ever. When banks, once bastions of strength and solidity within the market system, ran into such serious problems that the whole system was threatened with melt-down, governments had to come to the rescue with massive financial aid packages. Critics of the free market pounced on the troubles as evidence that the market system was inherently flawed. There were strong calls for much more intense economic intervention on the part of the government. Market forces, so the crisis had revealed, was marred by unacceptable weaknesses. But there was more. In the past decades governments had hived off numerous tasks to the marketplace. They had become convinced that competition would promote greater efficiency and that this, in turn, would lead to better services for the public. We now know that reality is less straightforward. In the health sector,
for instance, privatization has led to a situation where profits are frequently put before patients, with all sorts of undesirable consequences.

It is possible to argue that a shift in the balance between market and regulation can solve the problem. Certain powers and responsibilities could, for instance, be restored to the public sector. This would undoubtedly change the balance between the two forms of control (and alter the relationship between the individual and government), but would not lead to a fundamental systemic change. A glance back in history shows that this has been tried time and time again. In fact, it is a constant topic of debate in the political and social arena, but without ever leading to fundamental change. Minor shifts between the market and regulation have taken place down through the ages, but never have the nature of a systemic breakthrough. The balance between the market and regulation may change, but the fundamental system is left intact, and the need for permanent correction remains.

Another alternative would be to try to improve each of the two forms of control (i.e. both market forces and government regulation) separately. We have also rejected this option, because we do not believe that sustainability problems can be solved by making changes within the existing economic system or policy-making system.

The challenge, therefore, is to look for a self-correcting system and to work this out at practical level. Can we think of a control model that is inherently sustainable, and thus precludes the need for constant corrective government action, i.e. a radically new control model that does not merely constitute a change in the balance between government regulation and the market? If so, what would that system look like? This is a widely-debated and widely-written-about subject. But barring small-scale experiments with community-based economics (both with and without a local currency), detailed elaborations at practical level are rare.

Our search for a new system takes us to Giddens, who has sketched a new control model to replace the market and government regulation. He calls this the ‘third way’. His approach also ties up with what has been named the civil society, which is predicated on the concept of the self-responsible society. Rather than relying on market forces and government correction, society itself takes responsibility for solving social problems.

This is illustrated in the drawing below [government, collective, individual, private]:

In this drawing, relationships between governments and organizations in the semi-public sector are central in domain A. Sustainability issues are, of course, a central focus in this domain. There are complex structures and relationships in which responsibilities and powers have been allocated in an intricate and detailed manner. This concerns both organizations with decision-making and administrative tasks, as well as lots of subsidized research and educational organizations.

Domain B concerns the relationship between the individual citizen and the government. As we saw, this relationship is both calculating and non-committal. Though the government has been entrusted with all sorts of public tasks, many citizens see its role in a very different light. Far from being the representative of the common interest, the government is widely perceived as an anonymous bureaucratic apparatus. In their dealings with that apparatus, citizens mainly seek to advance their own personal interests. Individual citizens feel they can act as unsustainably as they like, but expect government to do whatever is necessary to achieve a sustainable society. Individual citizens thus currently maintain a non-committal relationship with the society in which they live.

Domain D covers the market. It is characterized by anonymity. Any relationships that exist in this domain are self-serving. Market forces cannot be trusted (for reasons outlined in Chapter 2).

The challenge in terms of a self-responsible society lies in domain C. The key question is: how can sustainability tasks be transferred from the public to the private sector. In view of the nature of sustainability issues, an individual approach must be ruled out. Common goods, as the name indicates, demand a collective approach. At the same
time, however, it is important to remember that – due to the reasons mentioned in Chapter 2 – we cannot automatically trust in existing specific interest structures and organizations. Because these only serve specific interests and consequently tend to perpetuate problems. The solutions they provide are, at best, compromises and therefore not sustainable. What is necessary is an institutional structure to which the government can safely entrust responsibility for sustainability issues. This calls for new coalitions around new themes. It also calls for new organizational principles - principles that avoid free-riding behaviour among the members of the organization. This implies strict membership controls, effective decision-making procedures and rigorous enforcement of any obligations imposed on the members.

But is it realistic to expect citizens to behave responsibly? Few have genuinely embraced the sustainability cause so far, so why should they change their mind now? After all, we live in an age of individualization, where individual interests prevail over all else. And why should people sacrifice their new-found freedom from restrictive relationships with organizations and structures by entering into new ties and obligations? Viewed in this light, it will take a lot of persuasion to get people on board.

However, the drawbacks of individualization are also widely recognized. The nanny state may not have been very efficient in executing its public tasks, but individual freedom has hardly proved a good alternative. Individual interest now takes precedence over the common good, and many public services that served the common good have fallen by the wayside. Many citizens agree that the pendulum has swung too far the other way. A recent survey by the SCP (Netherlands Institute for Social Research) revealed that a very large majority of the Dutch population is satisfied with their individual circumstances and are positive about their own future, but that two out of three people living in the Netherlands feel that our society as a whole is moving in the wrong direction.

3.6 New organizations

We noted in Chapter 2 that our existing organizational structure perpetuates rather than resolves problems. As a result, the current sustainability problems are institutionally embedded. Existing organizations and structures can therefore not be automatically trusted. This means that we need new relationships around new themes; a new institutional structure aimed at tomorrow's challenges instead of yesterday's divisions; and new coalitions around new challenges for change. Relationships must be reformulated with a view to protecting vulnerable common goods. Individual interests must be made subordinate to the totality, causing existing divisions to lose relevance.
These former divisions no longer matter. Continuity must be more important than striving for short-term profit. To achieve this, we need different valuation and settlement mechanisms which make it unattractive to put personal before public interests. Short-term gains could, for instance, be creamed off to such an extent that they are no longer attractive or even loss-making.

The next question is how the private domain must be set up to take over and fulfil responsibilities in a competent manner. In all events, the new structure will demand strong ties and interlocking interests between the individual and the community. As we have seen, the current economic system has the nature of a marketplace and this encourages individuals to focus exclusively on their own interests. Individuals do not feel the negative consequences of their actions. These are usually borne by the community. Many environmental problems are severely exacerbated by the fact that individual unsustainable behaviour takes place on a mass scale: one car is not a problem, but millions are. In short, a clear relationship must be established between individual behaviour and collective action.

Sustainability problems can only be solved through sustainable relationships. The management of common goods is a collective responsibility. An individual approach is not enough. In Chapter 2 we mentioned the tension between micro and macro levels that exists within the current economic system. So solutions at micro-level are not sufficient either. Networks, too, are not the answer because these are too informal and non-committal. An adequate approach to sustainability problems calls for strong ties within organizations as well as between organizations. In Chapter 2 we noted that the efficiency principle is less suitable because of its divisive nature. Ties are forged for as long as these are profitable and are severed as soon as the disadvantages start to outweigh the advantages or when alternative ties appear to be more profitable. The existing system is inherently individualistic. Parties are prepared to cooperate if it is to their personal benefit. Moving forward, we need more sustainable relationships based on the understanding that sustainable solutions can only be achieved in a sustainable institutional setting – a setting where parties are rewarded for sustainable rather than for unsustainable behaviour.

The resulting institutional structure must have a robust internal regime, within which new organizations are sufficiently well-positioned to take over key responsibilities from the government. One crucial element will be the ability of organizations in the private sphere to impose self-discipline upon themselves. How can we avoid the sustainability efforts of one party being cancelled out by irresponsible behaviour of another? Forms of non-committal membership are less suitable for this purpose, as individuals could then join and leave the new structures whenever it suits them. Instead, we need structures that reward sustainable behaviour. The set-up must be
such that even calculating citizens come to the conclusion that membership is preferable to non-membership. Free-riding, non-committal behaviour must be disadvantageous. The conditions must enforce commitment between the members of the organization. To this end, we propose to replace efficiency with reciprocity as the guiding principle. In a reciprocal organization, parties are encouraged to build sustainable relationships and there is no room for free-riding: individuals who put themselves before others must realize that this is damaging to their own interests, whereas sustainable behaviour is rewarding. The connections in such a structure – in terms of the advantages of sustainable behaviour and disadvantages of unsustainable behaviour – must be so robust and rigid that nobody can or wants to opt out of the structure. Cohesion then no longer depends on voluntary behaviour on the part of well-intentioned citizens, but is the natural outcome of properly understood self-interest. The challenge, therefore, is to devise mechanisms which attribute impacts at individual level; and if this is not possible or too expensive, then alternative measures with a similar effect must be developed.

Transparency is key in this process. People must know what the effect of their sustainable actions is and have a vested interest in sustainable behaviour. Transparency is also important because it serves to eliminate anonymity. Citizens can hardly be expected to take personal responsibility in opaque frameworks which lack transparency in terms of causes and consequences, and which provide no insight into the individual citizen’s personal contribution to the overall result. Far from inviting individuals to carry responsibility, anonymous structures actually discourage it. Formal and bureaucratic structures give individuals ample opportunities to justify unsustainable behaviour. Instead, individuals must be able to take up a recognizable position and be able to rely on respect for taking and carrying responsibility. In short, the new structures must be based on strong and meaningful relationships that do not serve transient short-term interests.

Small-scale organizations can make an important contribution to transparency. Large structures notoriously lack transparency. Within these structures, it is hard to see the big picture, information flows are difficult to organize and accountability is harder to achieve. The anonymity of formal structures makes it easier to evade responsibility. Van Witteloostuijn notes that organizations tend to offload negative effects onto society. He advocates simplicity. Many organizational changes, he says, merely serve to complicate matters, thus necessitating further – and equally ineffective – changes.

The decision-making procedures in such organizational relationships require special attention. Very often, challenging and promising initiatives run aground due to internal divisions over key issues or long-drawn-out decision-making procedures ending in compromise solutions which leave the underlying problems intact.
The proposed transformation represents a transition from forms of non-committal citizenship to forms of citizenship based on responsibility and duty. This is not an easy task in an age of individualization, where people are reluctant to enter into binding relationships. But this is the transformation that is necessary. Because, as we saw, the current setting provides too many opportunities for evading responsibility. We will return to this point in Section 3.8, where changes within the political domain are discussed.

3.7 Government positioning and role

The government occupies a pivotal position in the current system. The new control model based on self-responsibility and self-governance will clearly have major consequences for the government's role and position. The more self-governing and self-responsible a society becomes, the less government has to do. There is less need for regulation, and hence less need for supervision and enforcement. Government will continue to play a supervisory role, but this will be less far-reaching and less hands-on.

Government will also need to become more receptive to problems and solutions that are meaningful to citizens. Because, as we have seen, the current situation is characterized by a gap between what is important to society and what is important to government. The new situation changes the relationship between government and society. There will be much more room for private initiative. Instead of determining what solutions are permitted on the basis of its available policy instruments, the government will seek to serve and facilitate private initiatives. This, incidentally, by no means entails an absence of commitment between government and society. Voluntary agreements that are long on resolutions and short on actions will no longer be acceptable.

The use of policy instruments will also change. Some instruments will become redundant or less important. Others must be used differently to create the best possible conditions for the transformation in hand. With government operating at a greater distance, direct intervention will become less common. However, this will make it all the more important to formulate objectives in clear and precise terms and to impose strict accountability procedures to ensure their proper implementation.

As noted, the settlement mechanisms between the three sub-systems will play a key role within the new control system. Settlement can take place in different ways. New connections can be established between rights and duties. The right to carry out profitable functions, for instance, can be linked to the duty to fulfil loss-making but
vital sustainability functions. An alternative would be to arrange settlement through the tax system. Taxation could then be used not just to generate revenue and redistribute wealth, but also to promote a sustainable society. This, however, would demand radical adjustments compared to the existing tax system.

Initiatives are already being taken to promote a self-responsible society. These community-based initiatives involve groups of citizens designing their own systems for exchanging goods and services within the local community. Unfortunately, such systems sometimes fail to get off the ground because they fail to comply with existing regulations. Our tax system, for instance, is an obstacle. The bartering of services within a closed system deprives the government of tax revenue in the form of lost value added tax. If these community systems were to grow into a large-scale bartering exchange, this could have a significant adverse impact on tax revenues.

Instead of discouraging – or even banning – such initiatives, conditional exemptions could be granted. But it would be even better to implement a radical reform of the tax system aimed at transforming taxation into an instrument for promoting a sustainable society. This would have to go much further than isolated measures such as energy-saving subsidies or tax incentives for green investments. The entire tax system would have to be set up on entirely new foundations. The addition of value is an important principle within the current system. Everyone who adds value to a good or service is taxed on this. So the more value you add, the more tax you pay. This applies to entrepreneurs as well as to employees. Corporate profits are creamed off and income is taxed. Such a system is open to criticism from a sustainability perspective. Instead of taxing activities that yield added value, you could tax activities that have an adverse impact on sustainability. In this case, non-renewable production would be taxed more heavily than renewable production. Luxury goods would be taxed more heavily than essentials. Products would attract carbon footprint tax at a progressive rate. As a result, taxation would no longer be based on added value, but on extracted value. It could then be specifically targeted to promote beneficial activities and discourage harmful activities. In this way, taxation could contribute towards the self-governing capability of the economic system. The more self-governing the system becomes, the less need there is for the government to intervene. In its purest form, this would induce entrepreneurs to add maximum value to a minimum quantity of inputs. Taxation would then be placed less on labour and more on the utilization of finite resources – so there would be less taxation on profits and earnings, and more on unsustainable behaviour. An added bonus of such a system is that the government may be able to make do with less tax revenues – because at present a substantial slice of tax income is currently needed to protect the environment. In an economic system that is designed to promote sustainability, there will be much less need for
expenditures on environmental measures, thus permitting substantial savings for the public purse.

Radical change will also be necessary in the field of knowledge and innovation. Putting new themes on the agenda will have consequences for the knowledge and innovation system. We said that our institutional structure is built around divisions that are rooted in the past, instead of around challenges for the future. In a certain sense, this also applies to the knowledge system. The knowledge system has also been institutionalized around dated knowledge questions. Traditionally, it is organized along disciplinary lines. Such a structure can act as an impediment when new challenges demand a multi-disciplinary and/or trans-disciplinary approach. The task in hand is no longer to formulate even more detailed answers to yesterday's knowledge questions, but to formulate challenging issues for tomorrow's knowledge and innovation agenda. In the knowledge system too, however, certain parties have an interest in maintaining existing structures and keeping the associated cash flows intact. When dominant themes lose their significance, this will have an impact on the allocation of budgets. If there are strong parties that are able to influence the budget prioritization and allocation process, there is the risk that the preservation of the existing knowledge system may become more important than achieving the initial purpose of that system, namely to produce relevant knowledge for the future. The need for renewal will then be made subordinate to the desire to maintain the status quo.

An important point in the field of innovation concerns the room that a policy system offers for seeking systemic breakthroughs which ‘by definition’ fall outside the existing policy frameworks. Is there scope and latitude for undertaking targeted efforts to find and implement innovations, even if these go against existing policy? Or are innovation tasks and processes designed and organized in such a way that they only serve the needs of the existing policy system? If so, questions that do not suit the system will go unasked, and only innovations that fit the existing system will be given a chance to prove their worth. The resulting innovations will then be aimed at improving the functioning of the system, but not at innovating the system itself. In other words, the symptoms will be treated, but not the causes. And vital radical changes will fail to materialize. Our systems will then merely lead to reproduction instead of renewal. Instead of shaping the future, we will merely repeat the past. This may be good enough for dealing with superficial problems, but it is definitely not good enough for tackling situations where fundamental change is imperative.

As we saw, the current policy system has a high absorption capacity, a great ability to deprive systemic innovations of their systemic-innovative character. As a result, the innovations lose their power to reform and renew, and the system is left intact. Bold
ideas are reduced to small-scale experiments and initiatives that are placed outside the formal system. Any efforts to increase their scale and scope to the real world meet with resistance from within the system, so that these initiatives can never become part of the mainstream.

3.8 The role of politics

The allocation of value clearly belongs to the domain of politics. So any debate about sustainability, and notably the question whether radical changes such as a reversal of dependencies between the economic system and the two other systems are desirable or necessary, should consequently occupy a prominent place within the political debate. Even so, in many respects no such fundamental discussion is taking place. One possible explanation is that the economy is also dominant in the political domain. As we saw, there is a tendency to equate a nation's health and wealth with the state of its economy. In this case, the development of GNP serves as the yardstick for deciding whether a country is in good shape or not. Is productivity rising? Is employment growing? Is inflation under control? Is the balance of trade improving? This means that in everyday life the economic system not only holds sway over both other sustainability systems, but is also dominant in the political domain. This is understandable up to a point – because the development of the economy is closely related to the causes of and solutions for social problems. Employment is one example. Many social issues are related to the economy. When the economy is going through difficult times, environmental objectives must be temporarily placed on the back burner. When tax revenues are lower than expected, public spending cuts are required. The economy drives politics, rather than the other way around. The economic system and the way it works is treated as an immutable fact of life. The underlying values of that economic system are rarely put under the microscope in the political domain. This is odd given the recent economic crisis and the fact that, in a constitutional democracy, the political domain is precisely the area where fundamental changes should be set in motion.

There is good reason to believe that the politicians’ continuous failure to get a handle on sustainability issues can be traced back to the tendency to treat symptoms rather than the causes. The politicians basically set themselves an impossible task. This suggests that political ineffectiveness is largely attributable to the fact that politicians make themselves dependent on the economic system – which, in turn, is the consequence of an implicit choice to leave fundamental issues out of the political debate.
Clearly, there is every reason to put a change of values on the political agenda. For the political domain is the most appropriate arena for debating this theme and taking appropriate action. Yet no such debate, let alone action, is taking place. Even though experience shows time and again that superficial interventions are not or no longer sufficient, no one takes the initiative to redefine the problems and approach them from an alternative angle. The analysis in Chapter 2 showed that underlying processes and structures should be the starting point for change. We require a wholesale reinterpretation of our values. We need to rethink the way in which we assign social responsibilities. It is not a question of changing a few rules, but of re-evaluating and redefining the fundamental assumptions underlying our regulatory system. The projected changes, and the means of achieving these changes, must be sharply articulated. Public appeals to citizens to behave responsibly are ineffectual in the current circumstances. As noted, these are issues of an ideological nature, so it is up to the politicians to put these issues on the agenda. The financial and economic crisis is too fundamental to be resolved with measures which, however logical, are essentially superficial, such as tighter supervision and clamp-downs on bonuses. The task in hand is to question old certainties and explore new avenues that open up more promising prospects of sustainable development. Unfortunately, politicians are disinclined to question old certainties. Fundamental issues are routinely narrowed down to an ad hoc operational level, and the interventions they propose may seem incisive, but actually leave the status quo intact. This is comprehensible within the prevailing political domain. Few have the will and skill to venture into unknown territory, where they may well be confronted with their weaknesses and vulnerabilities. Instead, they prefer to maintain a façade of ‘can do, will do’.

But there is another stumbling block. Every systemic change entails a change in the balance of power. Change is not in everyone’s interest. Positions can be weakened. Such considerations are not without significance within political parties. The problem is compounded by the fact that many special interest groups have found a home within political parties – which may be another explanation for the tendency to define issues at the level of interests while leaving key issues and themes such as our fundamental values and the valuation of common goods unaddressed. Another important consideration is the power struggle in the political domain. Political parties need to distinguish themselves from their rivals in order to win the voter’s favour – which is why political discussions typically seek to emphasize differences rather than find common ground.

Referring to Weber, Mannheim and Schumpeter, Blokland says that the process of modernization has given politicians less scope to put fundamental themes on the agenda. Utilitarian ‘ends and means’ thinking, which is so central in the modernization process, has also become dominant in the political domain. As a consequence,
fundamental social shifts no longer penetrate through to the political debate. The upshot is that ideological themes remain off the agenda, even though there is every reason to make them a central focus of debate. Politics is evidently not equipped for this task and prefers to give priority to ad-hoc everyday problems.

3.9 A new perception of mankind

Earlier we described that the central perception of mankind in the science of economics is that of a self-interested homo economicus. Self-interest causes the individual to make choices that yield him the greatest benefit. We also saw that relationships are subordinated to this overriding focus on self-interest. Efficiency as a criterion can easily have a divisive effect. You work together and maintain relationships for as long as these produce benefits. Another thing we saw was that we are organized around divisions that no longer serve any purpose. Individualization has been the dominant trend in the past decades. Citizens are calculating in their contacts with the government. Our systems are built on a perception of mankind as a rational individual. The result is widespread mistrust between individuals and institutions.

To arrive at lasting relationships, we need to develop a new perspective on mankind, one in which man is no longer subordinate to structures and their impersonal interests, but in which he himself takes centre stage as a respected human being. This creates more scope for personal development, but also the duty to act as a responsible citizen, as a member of society. New structures must be based on this new perception. Instead of being reduced to an impersonal object that is susceptible to regulation and control, man must be seen as an individual who is keen to pursue personal development and carry responsibility. Veerman emphasizes the uniqueness of man, as a being created to be meaningful and responsible (Veerman, 2007). Human dignity is thus regarded both as a value and as a duty. This view of a meaningful and responsible being does not fit in with the concept of a strictly regulated world. The French theologian Légaut criticizes our world for reducing human beings to standardized objects. He wonders why man is born as an original but often dies as a copy.

It is the connection between rights and duties that is essential: the right to develop and the duty to carry responsibility, according to one talents and capabilities. Your talent is your task. The more qualities a person has, the more responsibilities he must carry.

This calls for radical changes in the relationship between citizens and government, and in the mutual relationships between citizens. It means breaking through the current structure of dependencies and bringing about a radical transformation of our social
system. The Belgian philosopher Antoon Vandevelde analysed the Dutch social system and came to the conclusion that it could never be sustainable – not because it is unaffordable or poorly organized, but because it is socially flawed. In his view, a system that pays people benefits without requiring anything in return is essential anti-social. The community refuses to enter into a relationship with the individual. Anonymity rules. You are entitled to a benefit for as long as you live, and the entitlement ends when you die.

We also pointed to the sharp divide between the employed and the unemployed. The dominance of the economic system means that an individual’s value is measured according to his position within the economic system and the contribution that he makes to that system. Those who do not work are a burden for the government and make a claim on resources that must be produced by others.

In the new system, an individual's significance within the community is viewed in a much broader social context. A person is not meaningless solely because they do not perform paid work within our economic system. The new system provides a strong basis for a much broader interpretation of value. And rightly so. Because a healthcare volunteer or a youth supervisor in a sports club may well be more valuable to society than many people in paid employment. But the limited valuation base within the current system fails to recognize their true value.

3.10 Summary

The transformations and attendant solution approaches can be summarized as follows:

- From an economic system that puts sustainability under pressure to an economic system that supports sustainability.
- Reversal of dependencies between the three sustainability sub-systems.
- From a valuation system which exclusively assigns value to economic benefits to a valuation system in which everything that is beneficial to society is assigned its true value.
- From a system where sustainability costs can be passed on to others to a system where sustainability costs are fully charged to the responsible party.
- From a governance system where the government must take constant corrective action to a self-correcting system.
- From non-committal citizenship to citizenship based on responsibility and duty.
- From large-scale and anonymous control systems and organizations to small-scale structures characterized by maximum transparency.
Against the backdrop of these transformations, the following new concepts need to be developed in order to work towards a sustainable regional agricultural system:

- An economic model that is based on, and in tune with, the dynamics of natural processes.
- Demand-led food chains where consumers carry responsibility for the manner in which the food is produced and also have a say in the production methods.
- New organizational relationships to which the responsibilities for sustainable regional agriculture can be safely entrusted.
- New concepts for responsible citizenship. How can responsibilities that currently rest with governments be transferred to the private sector?
- Organizational forms that are self-correcting.
- New settlement systems where profit-making and loss-making functions are linked on a compulsory basis.
- In this connection it is also interesting to explore whether the existing judicial regime that governs land ownership and usage rights is ripe for renewal. Can we devise a system where public management is more sustainably linked to private commerce?
- New valuation systems in which socially relevant agricultural functions are valued according to the contribution they make to society.

Briefly summarized, these transformations involve the development of new economic models, new control models and new chains. Each of these transformations is separately discussed in three reports\(^1\) commissioned by InnovationNetwork. These reports also provide an overview of the latest insights and experiences in these fields.

\(^1\) De civil society als drager van een duurzame regionale landbouw, InnovationNetwork Report 09.2.223, November 2009.
Literature

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