Chapter 6

CONCLUSION OF FINDINGS, THEORETICAL REFLECTIONS AND POLICY IMPLICATIONS

The research set out in the four preceding chapters started from macro-economic growth data, official reports and personal observations of new economic dynamics in poor craft villages in northern Vietnam. After the economic policy reforms towards a free and open market economy, small producers in these informally organized clusters seized new economic opportunities that led to business development, economic benefits and also had societal consequences. These involved both positive and negative externalities in terms of environmental and socio-economic living conditions. Four, partly-overlapping, key debates in contemporary development were used to establish my research framework: poverty, sustainable development, small business and globalization. These were combined to develop the research question ‘how to understand responsible innovation in poor small producers’ clusters in Vietnam following the country’s integration into the global economy?’ The literature reviews discovered a paucity of available literature and data addressing the multi-faceted issue of responsible innovation in informal economic contexts. The research foremost concerned the development of conceptual clarity at micro level by applying a grounded theory research methodology. Little research has been done into these aspects of economic innovation in Vietnam, or other developing countries. Research to date has mostly focused on the macro level and has been informed more by theory or aggregated quantitative data mostly in formal, institutionalized and hi-tech western situations. It became evident that there was a clear need to explore, in a qualitative way, how innovation processes unfold on the ground. This led the research to apply a grounded theory research methodology in order to develop conceptual clarity at the micro-level. This approach made it possible to explain the processes of innovation and responsible innovation in
informal contexts, contribute to theory building and lead to some policy suggestions and the identification of issues for further research.

6.1 Summary of findings

The second chapter addresses the issue ‘can small firms innovate?’ and started with the observation that contemporary economic theory does not provide a suitable definition for assessing innovation in small producers’ clusters, such as those found in northern Vietnam. The article develops a conceptualization of innovation, based on an analysis from economics, business administration, management and other related literature. In overall terms, innovation is described as the process of introducing something new that creates value. Innovation is considered as an interactive process, initiated and owned by firms and entrepreneurs. The definition was operationalized for the Vietnamese context through the use of a qualitative innovation assessment instrument: a checklist of criteria and threshold descriptions. The instrument proved to be an appropriate and practical methodological tool to identify whether ‘innovation’ was taking place in these informally organized small producers’ clusters. The article identified three craft villages where innovation clearly had occurred.

One notable feature of these cases is that the innovation process is not owned and managed by one firm (which is the way that innovation is conventionally understood as occurring). Instead, the steps of the innovation process were in the hands of several small producers, supported by a large group of interested followers. The village’s social capital provided back-up, trust and information and this enabled learning and risk taking. In this context, it is more appropriate to use the term ‘cluster level’ innovation. Moreover, globalization played a critical role in all three innovation cases; small producers were able to create value by joining global value chains and linking up with global markets. The literature signals that globalization also poses a potential threat; internationally dominant actors may exploit small producers and damage established and balanced socio-economic structures. The definition of innovation developed in this chapter tackles this issue; it is essential that the entity (unit of analysis) introducing the newness owns the process of innovation as well as the value created.

In the three cases where innovation was identified as having taken place this was actually the case. In contrast, the bamboo village that at first glance seemed to be an example of innovation did not conform to the criteria for cluster-level innovation. New technology had been introduced into this cluster through a partnership between an NGO and an international bamboo exporting factory. The NGO had ownership of the innovation process while the factory – the dominant actor in the value chain – appropriated most of the value through its market monopoly position.

In the course of the innovation assessments in the field, new observations and questions emerged: harmful societal consequences of innovation seemed to arise in the cases studied. These negative externalities were at odds with the overall goals of poverty alleviation and sustainable development that were part of the rationale for these developments. Surprisingly, one innovation case created positive externalities through the introduction of clean technology. These positive as well as negative environmental and social consequences are potentially significant since the total number of micro-enterprises in the clusters make them comparable with large companies (in terms of production volume and employment creation as well as emissions and social and
economic impact). Chapter 3 starts from the position that there is no unconditional implication that poor people will participate in or benefit from innovation. Such conceptualization of innovation should be combined with today’s notion of poverty alleviation including dimensions such as capability, empowerment and fulfilment of basic needs. In addition, broader views on sustainable development should be taken into account, including a consideration of the environmental and social consequences of innovation and their distribution among the community providing the source and context for innovation, as well as the importance of participation. Where innovation takes place that is accompanied by concerns for the identification and the acceptance of societal consequences by all parties, followed by the integration and continuous tracking of these social, environmental and economic outcomes then these can be termed responsible innovation. Where these considerations do not take place the activity carries the simpler label innovation.

Chapter 3 explores ways to conceptualize and operationalize responsible innovation in the context of small producers’ clusters in Vietnam. Initially, the research took an epistemologically modernist and positivist approach aimed at an objective and technical investigation of the broader positive and negative externalities arising from innovation. However, it soon became evident that such an investigation was methodologically problematic. The broad array of societal consequences in these communities arising from the innovations proved to be too complex to reduce to a preselected checklist of criteria. Moreover, impossible choices arose over which, out of several competing, normative frameworks (local, universal, western) was most appropriate for benchmarking the checklist criteria. Local normative frameworks were very different from the others, in the sense that they were set by context-specific cultural factors, local interests and perceptions about value creation, the distribution of consequences and trade-offs. Villagers, who experienced a significant increase in their incomes, might assess the harmful consequences of an innovation differently than outside researchers. Harmful outcomes might be viewed as an acceptable trade-off for the benefits arising from an innovation. Chapter 4 abandons the idea of conceptualizing responsible innovation in terms of investigating the consequences of innovation in a positivist way. Instead, the chapter proceeds by taking an epistemologically approach based on social constructivism. In this way responsible innovation – like sustainable development – is viewed as a participatory process involving perceptions, human behavior and interactions in the community. It focuses on the ways that innovators acknowledged, or were encouraged to acknowledge responsibility for the broader consequences of their innovations. The key issue then became how conflicts over assets and rights to property and to development arose and what part (if any) innovators played in resolving these. This chapter advances an empirically-grounded societal process stage model of innovation in which the community members in each case assess and value the outcomes and consequences of innovation against their own local normative framework(s). In the case of harmful consequences, the community members may feel adequately compensated by other benefits derived from an innovation and accept this as some form of trade-off. This leads the community into what I term the ‘responsible innovation zone’. Bat Trang is positioned in this zone; the ceramics producers acknowledged responsibility for the air pollution caused previously by the charcoal kilns. Alternatively, the harmful outcomes may lead to conflict, which puts the onus on the innovators to acknowledge their responsibility for creating the change that lead to the consequences in dispute. In some cases they will behave opportunistically – and third parties may not have sufficient influence to change this. In these cases the community will become stuck in a situation of unresolved conflict. More preferably, the innovators will
acknowledge responsibility and seek some way of resolving the conflict either through compensation or by modifying the innovation. This again will lead the community to the ‘responsible innovation zone’. The stage model thus serves as an analytical framework and helps to position a community in terms of responsible innovation.

Using clusters as the unit of analysis had implications for the way of which responsible innovation was conceptualized. The whole village is involved in the innovation process in one way or another, enjoying the benefits and dealing with any outcomes, which can include negative externalities. The villagers often have mixed interests that are experienced within the geographical boundaries of the cluster. Perceptions of harm and subsequent reactions and behaviour can vary, according to the identities and roles of actors in the village, their interplay and interactions. Reaching an agreement about whether outcomes are harmful and whether the trade-offs involved are acceptable or not requires a process of internal negotiation among the different actors in the village. In the best case scenario all actors are able to participate in transparent discussions (a multi-actor platform) which will lead innovators to accept responsibility for the (possibly unforeseen) consequences of their innovations. The conceptualization proposed in this study shows that responsible innovation represents a network of agreements and responsibilities in which all actors in the cluster have agency and support.

Dominant actors are in a position to frustrate or thwart such a multi-actor process by overruling the negotiation process. This might be a direct result of globalization: Nadvi (1997) shows how delocalization can introduce differentiation or specialization within clusters of producers in developing countries, creating dominant actors. The Phu Vinh case illustrates this observation. The export companies gained a monopoly position and were able to set a lower price for the household producers. The export companies as dominant actors have no interest in discussing any internal conflicts about the uneven distribution of value added by the innovation. A similar pattern emerged in Van Phuc, where the shop owners gained a dominant position and indirectly led the dye workshops to pollute by ordering new colours that required the use of chemicals. By contrast, in Bat Trang, the example of responsible innovation, no significant dominant actors emerged from the new set of market relations.

The Ceramics Association was the main discussion platform and remained committed to transparency and inclusiveness. This allowed a multi-actor process that made it easier to reconcile the benefits of innovative technology with environmental improvements.

Chapter 5 explores how a network of agreements can be created in a multi-actor context. It focuses on how actors acknowledge responsibility in the societal process by comparing two Vietnamese clusters of small producers. In one community the initial innovation took place and resulted in consequences and the process moved into the responsible innovation zone while in the other case the community became locked in unresolved conflict over rights and the loss of rights. The chapter considers various theoretical perspectives to understand the processes that lead innovators towards acknowledging their responsibility for the harmful consequences of innovation. However, none of the associated analytical frameworks were able to address all the issues at hand: innovation process, human interactions, conflict resolution, participation and material outcomes. As an alternative, Actor-Network Theory (ANT), which is more a methodological lens to examine an issue and its context than a theory, was applied. This enabled me to describe, in dynamic terms, how the human and non-human interactions evolved into actor networks. The ANT lens provides a conceptualization tool that was epistemologically challenging; combining the ‘real’ outcomes of innovation (positivism) with how humans
perceive, respond and react to events and to one another (constructivism). The chapter compares two cases - describing the processes that led towards the formation of the actor networks. It concludes that responsible innovation is a situation in which all relevant human and non-human ‘actants’ in the community are enrolled in a network. The human actants join the network and support the innovation from a basis of free choice from which they enjoy – from their perspective - sufficient benefits. As responsible innovation concerns the whole community and the ANT lens (by definition) considers all actants in a field, there was a good match between the theory base for responsible innovation, the methodological approach (ANT) and empirically evidence observed in practice.

6.2 Theoretical reflections

A major part of the research concerned the conceptualization of innovation and responsible innovation in the context of a developing country. As explained in the introduction and the subsequent chapters, this was essential due to blind spots in theories and the limitations of macro-economic analysis of industrial development, entrepreneurship, innovation capacity and globalization. The conceptualizations advanced in the three chapters are rooted in micro-level observations. The on-going reflections and interplay between the empirical observations and theoretical references – (following the practice of applied grounded theory) - brought new theoretical ideas and elements, which are discussed below.

In recent decades, there has been growing interest in role of entrepreneurship (at the micro and small enterprise level) within development. Various theories, approaches and models have evolved, including appropriate technology (Schumacher 1973, Akubue 2000), technology transfer models (Al-Ghailani and Moor 1995, Stewart 1977), micro-credit (Khandker 1998, Chavan and Ramakumar 2002), business development services (Dawson 1997), and more recently the bottom of the pyramid concept (Prahalad 2006). All these models share the view that entrepreneurship - directly or indirectly - is a potential route for poverty alleviation, and should be fostered by public support programmes and policies. These approaches typically focus on gradually increasing production and access to markets as a means of improving income and employment opportunities. The western idea of ‘innovation’, through radical technological developments and accessing new (export) markets is seen as having less relevance for small producers working in informal contexts. Chapter 2 demonstrated the existence of innovation in small producers’ clusters in Vietnam, a process that is initiated and owned by the villagers themselves, using their own strengths and initiative. These innovations are serious business, linked with globalization and there is no reason to downplay their potential or significance in terms of value creation and accessing new markets. Up to now only a few studies have documented such innovations. Bhalla (1989) describes innovations from small producers working outside the organized and formal economy in five developing countries. Van Dijk and Sandee (2002) discuss case studies, including the Kenyan food processing sector, furniture making in Nicaragua and tile manufacturing in Indonesia that highlight patterns of innovation adoption and diffusion. Gebreeyesus (2011) discusses innovation and micro-enterprise growth in Ethiopia.

It should be noted that other manifestations of innovation in developing countries have also been discussed in the past decade, particularly in more formal, advanced, medium and large sized, industrial sectors. The
numerous examples include the automobile industries in Mexico, Brazil and India (Vallejo 2010, Humphrey 2003). In China, the innovation spill-over effects of foreign direct investment to other industrial sectors have been addressed by Wenqing (2003). Research in India has focused on the country’s role as global innovator for ICT and hi-tech products (Dutz 2007). The innovation and sustainable development debates in developing countries also have discussed ‘leapfrogging’, a form of accelerated development which involves skipping inferior, less efficient, more expensive or more polluting technologies and industries and moving directly to more advanced, cheaper or greener ones (Lewis 2007).

At the same time, there is a wide acknowledgement (in both research and policy circles) of the need for poverty alleviation and sustainable development and the potential of innovation for contributing towards this. In Africa there are neglected opportunities for generating and appropriating value in agriculture and services (Kaplinsky 2007). Kaplinsky (2007) argues that the focus on sustainable incomes requires a shift in development strategies from industrialization to innovation. Innovation systems theory is increasingly being applied to understand these phenomena in developing countries. Lundvall et al. (2009) stress the importance of the Doing, Using and Interacting (DUI) concept of innovation, as opposed to the Science-Technology-Innovation (STI) concept. The first focuses on innovations, on interactive and ‘on the job’ learning through informal structures and relationships, which Lundvall considers highly relevant for developing countries. STI by contrast involves innovation characterized by high technology, innovation strategy and formal R&D practices. Chena and Puttitanuma (2005) argue the importance of strengthening the intellectual property rights framework in developing countries – as a prerequisite for stimulating innovation.

There are plenty of studies of innovation in developing countries. However, when the actual manifestations, types of firms, processes, technology, actors involved are examined more closely it becomes obvious that the definitions and understandings of innovation differ. Most references borrow concepts, definitions and quantitative measurement practices from the western-based ‘STI’ literature, involving indicators such as R&D expenditure and patents (Freeman and Soete 2007). By contrast, the Vietnamese innovations could not be evaluated by such indicators. These innovations arose from an attitude of open mindedness, mutual learning and on the job experimentation. Moreover, there are no numerical data available to measure these kinds of processes and their role in innovation. Statistical offices typically do not even include the informal sector in their databases. Thus there is a large gap in the data available about innovation in developing countries, particularly those with a strong informal sector, a reflection of the way in which innovation is conceptualized by mainstream development economics. To strengthen economic analysis of the potential of innovation it is important to have a more systematic and generic conceptualization of innovation in developing countries. This research goes some way to doing that, building a generic systematized conceptualization that combines universal notions with specific characteristics relevant to the informal context of a developing country. The research reported here that it is possible to assess the qualitative aspects of innovation in terms of process, newness and value creation. The qualitative assessment instrument developed as part of this research has shown itself to be a practical way to assess innovation in informally organized contexts where numeric data are absent.

Chapter 3 argues that small producers benefit from the new economic dynamics once they create value through the innovation. If the consequences of innovation lead to emerging societal conflicts and these are addressed and resolved; the community can be said to be in the zone of responsible innovation. These harmful societal
implications are increasingly discussed in current debates on open, social and sustainable forms of innovation (Hirschmann and Mueller 2011). The focus that has been developed in this thesis, on societal processes, could provide a missing conceptual link, capable of uniting classical, technical and economic oriented innovation research with new ways of thinking about innovation and its real contribution to sustainability. This approach operationalizes participatory and inclusive development dimensions, a central element in discourses about sustainable development, while also addressing essential elements of poverty alleviation – such as the capability approach (Sen 1999), basic needs (Streeten 1984), empowerment and citizen rights (Friedmann 1996) community development and livelihood approach (Rakodi and Lloyd-Jones 2002).

The societal process surrounding innovation is a distinctive characteristic in the conceptualization of responsible innovation and can be contrasted to the projectified approach of Corporate Social Responsibility (CSR) and stakeholder analysis as described by Frederick (1960) and Freeman (1984). A projectified approach assumes a predictable process of which the outcomes can be anticipated. However, the societal processes analyzed in this research were far from being predictable. They were open-ended processes, involving a multitude of actors, some of whom come and go. From this perspective, it makes more sense to shift attention from the quality of the outcomes to the quality of the process. This is line with the growing attention being paid in western business management practices to total quality management, process control and quality assurance. Increasingly, companies are focusing on these aspects (together with process improvement and benchmarking) as a potential source of sustainable competitive advantage (Powell 1995).

This focus on the quality of processes could contribute to the participatory dimensions of sustainability. As discussed in the introduction, sustainable development is often conceptually fuzzy (Daly 2006). Attempts to express sustainable development in absolute and objective terms, often lead to disagreements about the appropriate measurements and indicators to include on checklists and the normative framework of benchmarking (Bell and Morse 2008). The latter has been a particular problem in the ongoing global debate about the governance of climate change notably at Kyoto and Copenhagen (Hasan and Dwyer 2010). The societal process approach, which specifically acknowledges that sustainable development is participatory and should accept and recognize different normative frameworks - may provide a useful additional perspective to define, discuss and seek agreements in sustainable development debates. Indeed, it has been argued that the only approach to sustainable development is through participative processes of this kind (Carley and Christie 1993, Roome 1998 and 2011).

Lastly, the use of ANT in chapter 4 revealed the tensions inherent between entrepreneurship (required for innovation) and responsible innovation (which is inclusive by definition and thereby potential more sustainable). Can these two happily co-exist? Free market economists and innovation theorists see competition as essential to stimulate innovation (Ahn 2002). Competition is essentially about winners and by extension about losers and this potentially creates conflict. This is captured in the Schumpeterian notion of ‘creative destruction’ where the creation of value ordinarily destroys the source of early value creation activities. However, what is new in the concept of responsible innovation is that all innovations generate consequences that give rise to loosers. Responsible innovation suggests that conflicts over societal issues can be resolved. This relates to the inconvenient issue raised in chapter 4; stable networks where conflicts are more readily resolved do not
networks do witness innovation. Can we find an optimum balance and the mechanisms that provide a bridge between these two situations?

6.3 Policy implications

Academics (Desai 1998) and policy researchers (Blackman 2008) have observed that government policies in emerging economies have given priority to economic growth and often underplayed any harmful societal consequences of such policies. Thailand, China and India are usually cited examples where high rates of economic growth have been achieved with little consideration given to environmental and social conditions. The latter policies reflect the trade-off issue between private and public interest (and the allocation of development rights). However, Blackman (2008) argues that sustainable development is gaining a more prominent place on the policy agenda in emerging countries. For example, in Vietnam, official policy acknowledges sustainable development: "Fast, efficient and sustainable development, and economic growth, is consistent with the realization of social progress, equality, and environmental protection" and "socio-economic development should be closely combined with the protection and improvement of environmental resources, ensuring a harmony between the artificial environment and natural one, which will maintain biodiversity" (Vietnam Agenda 21 Office 2008). Many programmes have been devised to reach the target of sustainable development. It should be noted that, in reality, the Vietnamese government has limited competence or leverage to enforce its environmental policies. The policies that exist are rarely consistently enforced on the ground and this is one reason why many craft villages have become increasingly polluted in recent years (ref.).

Despite the recent interest in and awareness about CSR in business circles, the general assumption that governments bear the sole responsibility for addressing and protecting their people from the harmful environment and social impacts of economic activities is another obstacle towards the adoption of sustainable development practices. It is uncommon for people to recognize that poor small producers are able and or likely to acknowledge their responsibility for resolving environmental or social conflicts. Against this background it is quite remarkable that the ceramics producers in Bat Trang took the initiative and responsibility for introducing a clean technology. In a sense this can be seen as private initiative, capability and responsibility of poor people being the drivers of responsible innovation and sustainable development. This offers an opportunity for exploring 'alternative' policy options. Chapter 5 conceptualizes responsible innovation as the result of a societal process in which internal and informal mechanisms influence innovators’ behaviour. One could view this process as an extra layer of governance. Although policy makers may be reluctant to acknowledge the influence or power of informal mechanisms, this insight does offer the interesting possibility of encouraging shared responsibility. It is worth exploring whether socio-economic policy could focus on facilitating such societal processes and encouraging institutions to support responsible innovation (particularly in step 5 of the model of different stages).

The clusters of small producers analyzed in this study are typical of much larger numbers of poor small producers in Vietnam (and in other developing countries). In Vietnam, there are many villages comparable with the researched villages that are witnessing new economic dynamics as a result of entrepreneurs seizing new
opportunities, but where poverty persists and new social and environmental problems are emerging as a result of those new dynamics. Thus there is scope for encouraging responsible innovation to enable larger numbers of small producers to participate in and benefit from these new economic dynamics, without creating unforeseen and negative consequences that endure without resolution. Although there are currently no policies or programmes in place that specifically focus on promoting innovation in these contexts, it is worth reflecting on the implications of introducing such policies. Before turning to look at the specific policy implications for these informal small producers’ settings, it is important to make several observations about the process of policy making itself because innovation policy typically focuses on technology transfer and encouraging R&D expenditures in SME and large firms (OECD 2011).

Evidence-based policy making is a dominant practice these days and reflects the ‘modernist’ faith in policy informed by reason - ‘what matters is what works’ (Pawson et al. 2005, Sanderson 2002). There are several overall policy development approaches and models, such as the ‘policy cycle’ (Jann and Wegrich 2007) and the logical model (McLaughlin and Jordan 1999). Policy frameworks are usually embedded in larger theoretical principles and perspectives, typically developed from fundamental research. Within these broad frameworks, policy-makers use a wide range of qualitative and quantitative research sources – including many different research procedures, techniques or methods - for generating evidence, setting priorities and making specific policy decisions (Howlett and Ramesh 1995, Fisher et al. 2007, Nutley et al. 2000).

With regard to innovation policy, the dominant principle guiding policy development is based on innovation systems theory (Lundvall and Borrás 2005, Edquist 2002). This sees innovation as surrounded by a complex of supporting institutions that provide technology, education, finance and the necessary regulatory frameworks. The institutions within these innovation systems exist to overcome obstacles, create trust and stability, structure actors’ interactions and provide information to (potential) innovators. The formulation of innovation policy requires an understanding of causality within the specific problems and constraints, institutions, innovation capacity and outputs. Birkland (2011) argues that policy makers usually rely upon a reductionist approach - such as provide by the approach of factor analysis – possibly supplemented with outcome forecasts (via cost/benefit analysis and environmental impact assessment for instance) to select policy priorities and set targets against normative benchmarks. The resultant interventions usually consist of R&D subsidies, tax incentives, setting technical standards, training and technology development, access to finance, innovation platforms and patent protection. Following on from the preceding chapter, one could call this ‘projectified’ policy, which assumes that the process of achieving the desired innovation outcomes is predictable and can be guided and controlled by providing incentives, and determining institutions as set by rules and regulations.

The projectified or rational, evidence-based, approach to policy making for innovation has been challenged on the grounds that it does not pay sufficient attention to the complexity and dynamism of practical realities and constraints (Sanderson 2002, Pawson et al. 2005) and that while rules and regulations determine institutions they are not necessary followed neither are the rules and regulations determined to cover and integrate economic, social and environmental outcomes. In other words, policy issues cannot be treated as single, isolated, issues, particularly in the case of complex multifaceted phenomena, such as responsible innovation. They should be regarded as meta-problems that consist of many interconnected issues (Roome 2001); one problem within a problem the set is likely to impact on other aspects of the set and no one organisation can adequately address the
problems in the set (Chevalier and Cartwright 1996). Policy responses to emerging meta-problems should not be focused on single issues. Warren (2005) observes that policy formulation rarely takes dynamics into account indeed. Approaches to innovative policy have recently been developed in an attempt to address the dynamic and complex interrelationships that exist between the multitude of factors that influence policy making and policy outputs. Lundvall and Borrás (2005) see the contours of a new innovation policy emerging, which they call ‘knowledge policy.’ This recognizes that innovation and competence building involve many different sources of knowledge and that innovation itself is a learning process. This is consistent with the notion that sustainable development is a process based on learning, innovation and change (Roome, 2001) Nill and Kemp (2009) have suggested the need for evolutionary approaches to support sustainable innovation policies. Dunlop et al. (2001) have developed a policy model to reflect the dynamism of roles and policies (and subsequently of emerging conflicts) for large enterprises working in chaotic environments. They emphasize the fluidity and complexity of interactions faced by enterprises working in such environments. Sutton (1999) argues that policy development should not be seen as being an expert-based linear policy process; but as a societal process involving the research input of experts, the opinions and perceptions of different stakeholders and the power-plays and politics of policy makers who prioritize and negotiate their choices. In this view, policy processes can be considered as a ‘policy network’: made up of a group of individuals and organizations that share belief systems, codes of conduct and established patterns of behaviour. Establishing an innovation policy involves not only a search for acceptable technical solutions, but also a whole range of interactions that occur in an underlying societal network.

The challenge and importance of incorporating dynamics, networks and processes in policy-making reflects the arguments developed in this research. The societal processes that lead towards responsible innovation (or not) are not predictable and controllable; they are characterized as meta-problems and steered by the chaotic interactions of a number of human and non-human actors. Macro policy frameworks that are couched in terms of inputs, incentives or rules to address specific constraints seem ineffective in such circumstances. Innovation in informal situations is highly uncertain and context-specific – no-one knows what the innovation outcomes will be, what societal consequences will materialize or how the community will respond (choosing conflict or trade-off). Moreover, giving the normative framework of the societal process, it is likely that the various policy network actors – innovators, villagers, researchers, policy makers – will not be able to agree on a set of benchmarks for responsible innovation policy targets relating to the environment, social indicators, labour conditions and health indicators, etc.

As an alternative to such an approach this research suggests that policy for responsible innovation should focus on the dynamics and the quality of the societal process (as suggested in the conceptualization of responsible innovation advanced in Chapter 3). The policy challenge is to facilitate a community to move swiftly through the five stages of the societal process. In concrete terms, the policy should support a community: to assess the harmful societal change (stage 1); to understand the link with an innovation (stage 2); to weigh the positive and negative outcomes of the innovation (stage 3); to mediate and encourage innovators to behave responsibly (stage 4), and; to involve third parties to enforce or to provide incentives to innovators to acknowledge their responsibility (stage 5). The model’s theoretical reference points identify several possible problems, constraints
and obstacles that may hamper the societal process: bounded rationality, information asymmetry, opportunistic behaviour, power dominance and the lack of institutional frameworks, to name but a few.

That brings us to another challenge; these problems, constraints and obstacles may vary considerably from village to village. What is acceptable in one village may be the cause of conflict in another. Responsible innovation will unfold differently in different locations and thus a macro policy, with a one size fits all approach will probably not be effective. It is for these reasons that the Brundtland Commission report (1987) suggested that there was no single blueprint for sustainable development because what is sustainable is determined by the characteristics and conditions found in a given context. The current research suggests the need to develop micro-level policy responses that are context-specific if the policy objective is to promote sustainable development through innovation at the cluster and community level. In terms of the Vietnamese cases, these could manifest in an ‘independent’ policy making and implementation entity at the village level. Such an entity within the village administration would be able to analyze and understand the innovation outcomes, their societal consequences and locals’ perceptions. This research advances three methodological instruments that could be helpful in this respect:

1. The innovation assessment instrument. With the criteria checklist, policy makers in the village can qualitatively assess whether something new, produced by an informally organized unit can be labelled as an innovation. In principle, innovation creates value and improves the competitiveness of the unit concerned.

2. The societal process model of responsible innovation. With the help of this model, policy makers can position the issues and identify and understand any emerging conflicts, factors and, if and where, the (context specific) process runs into obstacles.

3. The ANT lens enables policy makers to understand the dynamics of the process and assess whether all the actants are involved or not. Moreover, ANT provides insights into new and emerging actants and the directions in which the network is evolving. It is essential to understand whether a village is being left behind with the harmful innovation outcomes, while the focal actors – appropriating most value – move on to other locations.

The credibility of the policy making entity at village level will depend on its autonomy and ability to interpret the innovation manifestations, societal outcomes and perceptions and to autonomously develop and implement context-specific ‘responsible innovation’ policy measures. Along the five stages of the model there are various possibilities for policy intervention to facilitate socially responsible innovation. Table 1, on the next page, suggests several ways of doing so. Moreover, context specific policy measures should monitored on an on-going basis so as to respond quickly to emerging issues in the responsible innovation societal process (this in line with the policy cycle approach).

It is worth noting that the suggested policy interventions are about improving the quality of the process, rather than providing incentives, or setting rules and regulations. This implies the promotion of multi-actor platforms. However, there is obviously a danger that the dominant actors will attempt to manipulate, dominate and overrule the multi-actor process if they want to evade acknowledging responsibility. The policy making entity has to strive to be neutral, impartial, transparent and involve external sources of information.
Table 6.1: Policy options to facilitate responsible innovation

<table>
<thead>
<tr>
<th>Stage in the societal process</th>
<th>Possible obstacles in the process</th>
<th>Policy process options to overcome problems/constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: Whether there is a perception of a harmful societal change or not.</td>
<td>The community is not able to assess and agree whether there is a harmful or beneficial societal change.</td>
<td>Policy makers scan societal changes and inform villagers accordingly. They could organize multi-actor meetings to present information about the change, involving external ‘neutral’ partners. They keep the long-term impacts on health, environment and social structure stemming from innovation under review. Villagers can identify, bring forward and discuss the problems in multi-actor platform meetings.</td>
</tr>
<tr>
<td>Stage 2: Whether the societal change is a consequence of the innovation or not.</td>
<td>The community is not able to agree that the societal change is a result of the innovation.</td>
<td>Policy makers involve several external research institutions - that are considered neutral – to provide analyses on the causality between an innovation and any harmful societal changes. Policy makers present information from these different sources and organize meetings and facilitate the villagers in interpreting whether or not there is a link.</td>
</tr>
<tr>
<td>Stage 3: Whether the societal change is considered as a trade-off or if a conflict is emerging.</td>
<td>The community is not able to assess or agree whether the harmful consequences of innovation are compensated by the benefits of the innovation.</td>
<td>Policy makers present as much information as possible about the costs and benefits of the innovation, so that villagers themselves can balance and judge according to their norms. The interpretations of such cost-benefit analysis are discussed in multi actor meetings. Policy makers make the potential conflicts explicit.</td>
</tr>
<tr>
<td>Stage 4: Whether innovators behave altruistically or opportunistically.</td>
<td>The innovators are not explicit about whether they are behaving altruistically or opportunistically. There is ambiguity in the innovators’ attitudes and behaviour.</td>
<td>Policy makers challenge the innovator to take a position over whether they acknowledge responsibility or not. Policy makers encourage the innovators to behave altruistically and call the innovators to account.</td>
</tr>
<tr>
<td>Stage 5: Whether there are external parties to enforce innovators to take responsibility.</td>
<td>There are no third parties or existing institutional arrangements to enforce the innovator to acknowledge responsibility.</td>
<td>Policy makers sort out and facilitate juridical procedures, mobilize existing institutions or encourage institutional change/reform.</td>
</tr>
</tbody>
</table>
6.4 Research agenda

Theory

The previous paragraphs compare the research outcomes against various theories and policy issues concerning entrepreneurship, innovation, process, poverty alleviation and sustainable development in emerging economies such as Vietnam. These reflections lead to suggestions of possible areas for future research. These are set out below.

It is evident that entrepreneurship, which takes place in various economic sectors and types of enterprises, can make a contribution to economic development and poverty alleviation in developing countries. This research adds particular evidence of the innovation capacity found among informal small producers in northern Vietnam. Although there are few similar examples in the literature, this research shows that it is, nonetheless, a serious and significant form of innovation. Although these innovations are partially hidden and are not included in formal statistics, informal clusters of innovating small producers have a significant impact on the creation and retention of value in local communities – they lead to employment creation, income generation (positive outcomes) as well as generating pollution and increased gaps in income (negative outcomes). Further replication of the research in Vietnam (and other developing countries) could strengthen the assertion that innovation capacity is widespread among informally organized small producers, and that their innovations involve newness, processes and value creation.

The literature describes and analyses numerous examples of other manifestations of innovation among large enterprises and formally structured SMEs in developing countries. However, these notions and definitions of innovation differ substantially and are measured through a variety of indicators. There is, to date, no generic and comprehensive conceptualization that covers innovation in these types of companies as well as in the informal contexts, described in this research. Further research could focus on developing such a generic conceptualization framework for distinguishing what is innovation in various manifestations and forms, from what it is not. The framework could be further elaborated with innovation categories that allow systematic investigation and comparison of the different manifestations of innovation. The innovation assessment instrument, advanced in chapter 2, could serve as an input to assess innovation using qualitative criteria (process, newness and value creation).

The suggested replication of the research and broader explorations, investigations and descriptions of cases according to different categories of innovation - including the less obvious and overlooked – could provide the opportunity to develop a qualitative evidence base of data on innovation processes and outcomes. By comparing the empirical material, patterns could be identified and subsequent hypotheses be developed from various angles for further quantitative analysis.

One angle could be to compare the significance of small informal sector innovation types within a certain geographical area or economic sector with other categories of innovations, in terms of basic economic indicators such as employment creation and income generation. A similar analysis could be done comparing innovation categories that are in the responsible innovation zone with those that are not. Additionally, one could investigate which categories of innovation create societal conflict as a result of their social and environmental consequences.
From these explorations, hypotheses of the factors and conditions that promote or hamper responsible innovation could be developed and tested for causality. The responsible innovation model developed in chapter 3 could be of help in such analyses. Such analyses could also validate the applicability of the model for other contexts.

The qualitative evidence base, including cases, would also provide opportunities to combine micro and macro research. In the introduction it was observed that the macroeconomic evidence does not provide clear answers about the effects of globalization on poverty alleviation. The combined micro-macro analysis could reveal more about the context-specific processes and conditions under which certain categories of poor people can benefit from globalization. This will be scientifically challenging, because macro-analyses typically do not involve process, dynamics and conflict descriptions at the micro level. Nevertheless real breakthroughs in the understanding of the development process, its consequences and governance require research that spans different levels of ontology. In the same way the research reported in this thesis has focused on innovations and its consequences found in a village setting. This implies that all consequences are contained within a relatively local boundary. In practice this is not the case. It is possible to envisage that some consequences travel beyond the boundary of the village. These could be economic and environmental and possibly social. While a local institutional mechanism might contribute to the responsibility of innovation in a local context these effects would require mechanisms at other levels and scales of organisation. How these work is a subject of further investigation.

It will be of particular interest to explore further the relation between competitiveness and conflict. In free market settings, it is assumed that competition increases innovation. A consequence of this is that there will be conflicts once in a while. Can responsible innovation and ‘healthy’ competition co-exist? Competitive advantage is sometimes obtained by the irresponsible use of resources or waste disposal. Further research could explore the line or balance between competition and conflict in responsible innovation.

Finally, this research combines positivist and constructivist concepts and issues - innovation systems, institutional theory, clusters and network theory. In different ways each of these theories are relevant but no single theory provides an analytical framework or comprehensive theory to explain responsible innovation. ANT provides a useful lens but is not a theory ‘per se’. Further research could work on developing an analytical framework as well as a theory for responsible innovation by using ANT as the methodological approach. More research that combines these theories for informal contexts may add new insights to understand responsible innovation processes.

Policy

The paragraphs (above) on policy implications advocate developing context-specific policy making capacity at the village level in order to facilitate the resolution of societal conflicts. These would promote responsible innovation by enabling the community to follow the stages of the model in order to arrive in the responsible innovation zone. In order to do so, it is essential is that the local policy-making entity analyses and monitors the societal process and develops policy measures. For this to occur it is essential to create a multi-actor network is
essential. This idea could be developed by establishing a village policy making entity as a field experiment within some villages and then explore and analyse how the process works out in practice.

Before an innovation policy comes into being, apart from the technical solutions, there is a whole network of interactions in an underlying system of societal process. This is very much in line with the understanding of ANT. In this sense responsible innovation policy could be viewed as an actor network in which human and non-human innovation actants are enrolled and societal conflicts are resolved. It would be interesting to further research and analyse how a policy network constantly renews and updates itself through strings of translation.

Specifically, such ANT-based policy research into responsible innovation could explore the translation moments (Callon 1986) that lead towards the creation of a context-specific policy network. This would imply the establishment of an obligatory point of passage - policy makers at the village level - defining the ‘problematization’ (1st translation moment). This would contain the identification of the obstacles towards getting to the responsible innovation zone and the development of policy measures to overcome these obstacles. The ‘interessement’ (2nd translation moment) is the stage where policy makers initiate consultations and negotiations though multi-actor platforms to convince relevant actors to accept the roles and identities. During the ‘inscription’ (3rd translation moment) actors accept the policy implications and the associated rules of the game. Finally, the network is completed (4th translation moment), the policy is implemented and operationalized and the actors play by the game and feel represented by the policy-makers.

It is important to note that this is a cyclic process of ANT strings. New challenges will emerge, as well as new actants, new innovation outcomes and so forth. At repeated moments there is the possibility that the policy actor network will degrade and fall apart, necessitating the policy makers to go through the translation moments again.

References


