

Resilience of family farms: understanding the trade-offs linked to diversification¹

Ika Darnhofer and Agnes Strauss

Institute of Agricultural and Forestry Economics, University of Natural Resources and Life Sciences, Vienna.
ika.darnhofer@boku.ac.at, agnes.strauss@boku.ac.at

Abstract

Diversifying activities and thus income sources, both on- and off-farm, is a widespread strategy by family farms to enhance their resilience. Indeed, by building on several sources, family income is not affected as severely by e.g. price volatility for one commodity or by the effect of an extreme weather event, thus strengthening their buffer capability. Furthermore, diversification may encourage experimentation, thus broadening adaptive and even transformative capability. Yet, while diversity has clear advantages, it imposes high demands on the family members, especially regarding labour organisation. This includes the distribution of labour within family members, the coordination of labour peaks, and limiting the overall labour load. Based on the analysis of interviews conducted with Austrian dairy farmers, we show that farmers often miss early warning signs of work overload, not least due to social and cultural norms which push farmers to 'keep going', so that emotional and psychological exhaustion are not acknowledged. Thus it seems important to promote an awareness that while diversity has many advantages, it needs to be carefully managed to avoid over-burdening family members, which would reduce the resilience of family farm.

Keywords: on- and off-farm diversification, workload, burnout, gender roles, dairy farms

1. Diversity as key to resilience

Some family farms resist modernization with its focus on scale increase, specialisation and capital-intensive production methods. Such farms are often small, and are thus not able to benefit from economies of scale. Instead they use economies of scope, where the resources available on the farm – such as family labour, knowledge, networks, arable land, grassland and buildings – are invested in a range of activities, both on- and off-farm, for both agricultural and non-agricultural activities. Through diversification these family farms can offer a range of products and services, and thus secure family income.

The advantages of diversification and pluriactivity in maintaining family farms have been highlighted in the literature (e.g. Bryden et al., 1992). In particular, diversity is linked to the ability to buffer shocks occurring in one activity, as such a shock will have limited impact on family income, since a range of activities contribute to the income. Diversification has also been linked to flexibility and adaptability. Indeed, while the economic benefits of a new activity might not be immediately apparent, it is usually an opportunity to gather experience with e.g. a new crop, and – when an appropriate 'window of opportunity' arises – the activity can be upscaled and contribute to family income (Darnhofer, 2010). Engaging in new activities might also strengthen experiential knowledge, as well as contribute to developing social networks,

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as a farmer is likely to interact with new people as s/he engages in a new activity. Moreover, off-farm labour can build a strong link between farming and non-farming activities in rural areas, thus contributing to rural development.

All these are important assets in a turbulent world, marked by rapid change and lack of predictability. 'Surprises' have been linked to broader trends, such as climate change leading to an increase in extreme weather events, peak oil spurring price volatility, and globalisation which increases interdependencies between sectors and countries (Steger, 2013). In such a turbulent world, adaptive capacity plays an important role to secure the farm over the medium- to long term. And diversity plays an important role in strengthening adaptive capacity, since it provides the seeds for new opportunities and thereby increases the options for coping with shocks and stresses (Anderies et al., 2006; Berkes, 2007; Darnhofer et al., 2010).

At the farm level, there are various 'variables' that contribute to diversity, such as: biodiversity (including diversity of crops grown), diversity of resources, diversity of information sources and communication partners, diversity in relationship types (e.g. formal contracts, neighbourly help) and diversity of income-generating activities. Coordinating and nurturing this diverse set of activities and relationships can be challenging and needs to be finely attuned with the abilities and preferences of the family members (Darnhofer, 2010).

Unfortunately, strategies to build diversity are not yet well understood (Penrose, 1997), as most research efforts have focused on efficiency and specialisation (Darnhofer et al., 2010). In particular, more research is needed to understand the challenges involved in diversification, as the coordination and interaction between the activities can lead to a complex work organisation (Fiorelli et al., 2007; Madelrieux and Dedieu, 2008). The challenge in building diversity is thus not only to coordinate labour peaks and to ensure the flexibility necessary to accommodate unpredictable events, but also to ensure quality of life through a satisfactory work-life balance for all members of the farm family. As such, diversification needs to be carefully managed to avoid undermining the resilience of the farm over the short- and medium term.

In this paper we present an exploratory study focusing on farmer's perception of the challenges involved in managing diverse sources of income. We will show that ensuring that the workload remains within limits is a major challenge. Indeed, labour has been identified as key issue, not only regarding the organisation of on-farm labour linked to animal husbandry (see Dedieu and Servière, 2012), but also balancing on- and off-farm labour demands.

2. Data collection and characteristic of the interviewed farmers

This explorative study builds on the analysis of 40 interviews from two projects that focused on dairy farms. The first project (see Strauss 2013) assessed work quality (including work satisfaction, workload and work organisation) on dairy farms. It covered 31 dairy farms, which were selected to cover all milk production systems in Austria (i.e. from mountain farmers to those in more favourable, flatter areas). All 31 farms were managed full-time. On most farms both the husband and the wife were interviewed using semi-standardized questionnaires, resulting in 61 interviews. The analysis of this data set allows to give some indication as to the prevalence of challenges linked to work organisation, and gender-based differences in perceptions.

The second project (RETHINK) focuses on Salzburg, a typical dairy area in Austria. The nine interviews are the first in a broader study, and the farms were selected through snow-balling with the aim to cover a high diversity of full- and part-time farmers, as well as specialised and diversified farms. These interviews were recorded, transcribed in full, and coded. In this paper

we will use quotes from these interviews to illustrate broader challenges that farmers face with managing diversification.

Of the 40 farms, 38 were dairy farms (specialised or mixed farming), and the other two used to be dairy farms, but one shifted to keeping sucker cows and offering holiday on farm; and the other shifted to fattening turkeys and engaging in direct marketing. As is typical for Austria, most of the farms are not very large, with an average of 33 ha Utilized Agricultural Area (ranging from 4,5 to 79 ha), and they keep an average of 28 dairy cows (ranging from 4 to 75 cows). Even the farms that specialised in dairy production engaged in a fairly diverse set of enterprises on their farms, most often holiday on farm and direct marketing. Furthermore, as most farms own forest, some engage in marketing the wood, e.g. in form of wood chips.

Although the vast majority of the farms (37 of 40) are managed by full-time farmers (i.e. derive more than half of their family income from farming), this does not preclude one or both spouses from engaging in gainful activities off-farm. Such off-farm activities cover part-time or full-time work, e.g. as a school teacher, at a factory, as a digger operator, work for a machinery ring in the office or as driver of machinery, as insurance agent, as inspector for organic certification, offering winter services for the municipality, being a skiing instructor, or being self-employed in carpentry or ironwork.

Next to engaging in a variety of on- and off-farm activities aimed – among other – at generating income, various members of the farm family also engage in community life, e.g. through the local fire brigade, music societies, associations upkeeping regional traditions, various church-related activities or informal groupings to pursue specific interests. Indeed, in rural areas there is little scope for complacency, and farming families need to contribute to both the economy of the region and the viability of the community (Farrar-Bowers 2010:146).

Thus the individual members of the farm family are engaged in a wide variety of activities, which need to be coordinated to ensure that labour peaks do not coincide, and that there is sufficient time for all the key tasks.

3. Benefits from diversification

3.1 On-farm diversification of activities

Interviewees generally stated that they diversify their farms to avoid a one-sided dependency on the income from milk sales. Indeed, the volatility of milk prices has strongly increased in the last five years, and the deregulation of the milk markets (with the quota system due to end in 2015) raises new uncertainties. Interviewees thus seek to have several 'pillars' on which to rest farm income, e.g. milk, small grains, wood and – now – direct marketing:

“And then we started – with some luck – direct marketing. For us it was always an issue, that we build on at least three components: milk, small grains. We never stopped the grains. It is just feedgrain, but we kept the [nutrient] cycle. So we never really specialised, the way it is generally recommended. Instead we said: we keep the structure. We are full-time farmers, and our specialisation is milk. But that is no reason to stop cropping, or to neglect the forest. As a result, we always had at least three pillars.” (Interview 03_SimonJ:42)

Diversification is thus seen as a form of *hedging*, especially when the farm itself is fairly specialised. Indeed, farmers are well aware of the risks involved in 'putting all eggs in one basket', so that if e.g. milk prices were to suddenly drop, another activity could be upscaled to maintain household income:

“Well, it's simple, if a farm... it should be specialised. But one should not forget that this enterprise might one day not work out well. And if you can then push something else, then you have that. (...) We have always tried to make sure, either one takes up off-farm employment, or, as with my son, he chose to activate the forest. Because it is his area of

specialisation, he is a forester, he enjoys doing it anyway. And I would not have thought that it would be possible to make such an enterprise out of firewood.” (Interview 03_SimonJ:42)

Unused resources combined with a perceived demand may also spur diversification. For example, an interviewed couple decided to try raising geese, which is not commonly done in the area, thus being a potential niche market. Raising geese allowed them to make use of a barn that was empty during summer, when the heifers are on the alpine pastures. As such trying out geese was a flexible and open-ended experiment that did not involve a large investment or a long-term commitment:

“Well, we had talked about it for a while, both of us: geese. Because we have a barn for the young cattle and it is empty during summer. And then we said: let’s try it, yes, let’s try it. (...) It was really by chance, just to try something different. Just to see how it is. Or whether it is problematic.” (Interview 09_MariaM:190, 09_ManfredJ:200)

Additionally, diversification is seen as an *exploration of new activities*, as an opportunity to collect experiences and see if the suspected demand materialises. If it does, then the activity can be developed further, and may even lead the transformation of the farm. As in on this interviewee’s farm, where his father started by experimenting with a snack station. Over time it evolved into an inn, and then holidays on farm, which is now the main source of income for the family:

“And well, we immediately saw that there was a potential. That what we offered [the snack station] was too little, that there was the potential for more. Yes, and I mean, if you have the possibility, then usually you will use it. Well, and things evolve, when you see that there is more potential, that there is the opportunity to grow, to develop. And I think every healthy farm develops, when it has the opportunity.” (Interview 08_GustavT:71)

Finally, diversification is also an opportunity to engage in those activities that suit the *farmer’s interests, preferences and personality*. As one interviewee points out, his father was a sociable person and thus thought he would enjoy opening a ‘snack station’ for a few days a week in summer, welcoming the opportunity to interact with tourists and passers-by:

“My father was already, well, sociable and this and that. He thought he would enjoy it, if we had a snack station, which would be opened two, three days a week.” (Interview 08_GustavT:71)

Similarly the farmer who does not appreciate turkey but is enthusiastic about keeping geese, clearly showing that the choice of birds to keep was not based on economic rationality, but on personal preference:

“No, they [turkeys] are such ghastly animals. But a goose, it’s just a... yes, a beautiful bird! It’s kind of like that. Yes, also the way they are, they are really interesting animals, really! (...) Yes, I held them and petted them and I did everything. Around here they always said that I am the ‘mother goose’.” (Interview 09_MariaM:119-220)

3.2 Engaging in off-farm work

One or both spouses may engage in off-farm activities to ensure an additional source of income. Indeed, off-farm work is often driven by economic reasons, such as the fact that the *hourly wages* tend to be higher:

“The hourly rates were a lot higher before, a lot. I had my own business [in ironwork] and I had prime hourly rates.” (Interview 05_PaulJ:34)

The additional income can then be used to finance *investments* on-farm: “I went working, next to the farm, and thus we could slowly build the farm up, based on what was left over. We sold grain and through the job we could invest” (Interview 07_HubertJ:02). The additional income is especially necessary when larger investments need to be done – such as renovating a

building or building a separate house for the parents – which is especially the case when the farm has been taken over recently.

Off-farm work is also seen as *hedging* risks. As this part-time farmer points out, the off-farm income is an opportunity to buffer shocks (such as a drought which lowers crop yields). Furthermore, as they do not depend on their income from farming, they do not feel the same pressure as full-time farmers, which have to spend cash to purchase feed to maintain high milk productivity, as dairy sales are the main source of income:

“It is an advantage, that we are a bit more flexible than other farms. If I think about a full-time farm, they tend to be under pressure. Especially in years like this one, where we had absolutely no rain for two months. And then, if you are into cropping, then you can have really big problems. Which for us is somewhat minimised. I just say: I am not such a huge farm, so I do not need to buy so much feed. That is more difficult on a large farm.” (Interview 09_ManfredJ:114)

However, off-farm activities are rarely just a business decision, and often include a personal component (Farmer-Bowers, 2010). Indeed, these activities usually address a range of other needs, such as engaging in *social exchanges* to compensate for the relative isolation of working on one’s farm, the possibility to engage in camaraderie and earn recognition for one’s skill mastery, or generally have the opportunity to use and hone skills that are underused on farm.

“It was nice when I went to work and I had my colleagues and my work, and I managed it, and often performed very well (...) that was very positive... I sometimes miss this feeling now, these little successes. (...) Because when you work as a farmer for 20 years, much becomes routine. (...) It’s a different work environment, completely different, isn’t it? You do not have to like each other, but it often worked out well. The camaraderie we had, it was really good.” (Interview 05_PaulJ:32)

4. Drawbacks of diversification

4.1 A high workload

In the project on work quality (Strauss 2013), on average, women reported working 77 hours/week, of which 45% were linked to directly farm work, although differentiating between farm work and care for the family was often found difficult as they are often intertwined. On average, men reported working 75 hours/week, with 90% of that work being directly related to the farm. These results are consistent with statistical data from Switzerland, which shows that farmers as working about 60 hours/week, which higher than other self-employed groups, that work between 48 and 50 hours/week (BLW 2013:66). Not only do farmers work longer hours, they also take fewer vacation days. Indeed, in Switzerland: farmers take 7 days per year, which is much lower compared with self-employed (20 days) (BLW 2013:67).

This high workload can lead to stress and negatively affect wellbeing. Indeed, 24.6% of respondents (n=61) stated that their quality of life is negatively affected by the current conditions on the farm (Strauss, 2013). A substantial part of this assessment is due to limited satisfaction with work as a result of: high workload, mental stress, strenuous work, uncertainty regarding work (on-farm issues) and dissatisfaction with agricultural policy (off-farm influences). In relation to on-farm work, women perceived their high workload as the primary stressor, while men suffered most under time pressure. The strongest farm-based stressor in relation to quality of life was for both women and men conflicts between generations followed by illnesses.

While specialised farms may face similar challenges, it is likely that diversification adds to the work-related challenges. Indeed, juggling various on-farm enterprises, off-farm jobs, as well

as the requirements of family life can be very demanding. This is especially the case when a new activity develops faster than expected and/or the time requirements for an activity were underestimated:

“And actually it developed faster than we had expected, when we started with direct marketing. (...) We had really underestimated the time required, I must say. Producing vegetables was, is a really intensive work phase, although we produced only vegetables that could be stored: potatoes, carrots, celery, leek and red beets.” (Interview 03_SimonJ:8, 26)

4.2 Challenge to juggle different demands

The ability to juggle different activities, and especially off-farm work, depends on how much control one has on the timing of the work, e.g. when and how much to work off-farm. This interviewee thus considers the trade-off of full-time vs. part-time farming and argues that for her it is preferable to be a full-time farmer with a limited and *flexible* off-farm job, as is the case for her husband, who occasionally operates a digger at her brother's company:

“But I think that they [the part-time farmers who have a full-time job] are not necessarily those that are happiest, because when they come home from work, then it just continues at home and on the week-end too of course, and each Saturday. I mean the way it is with us: we are full-time farmers but my husband works a bit off-farm. I think that this works better, because we are flexible in our work organisation, because he does not have fixed times where he has to be at his job.” (Interview 02_AmelieA:57)

A high workload, due to off- or on-farm work, may negatively impact on-farm activities, as there is simply not enough time to *manage* each activity as intensively as would be desirable. As this interviewee notes, while they generated additional income from direct marketing, their income from dairying was reduced, as they no longer had the time to adequately manage the cows:

“We were overburdened with work and what was we gained from direct marketing is what we lost in the barn. We had too little time, it just keeps going and you don't really notice it, when you do less for a week. The first thing we noticed was that cows didn't get pregnant the way they should. Yes, of course, we went into the barn only irregularly, and we didn't spend much time there. And sometimes we only got there at nine in the evening, then we quickly milked them, and what really needed to be done. Then you see that one is in heat. But you can't call the vet at ten at night. Then I completed a course on insemination, so I could do it myself. But it did not really change much. Our income from dairying started dropping, because we did not have the time to do it well.” (Interview 07_HubertJ:100)

However, a too high diversity of activities not only negatively impacts productivity and income, it also presents a burden for the family.

4.3 Negative impact on the family

The impact of a high workload may range from the relatively benign to severe, long-term negative impact on psychological health. For example one interviewee pointed out that his off-farm job meant he did not have much time to spend with his children, a wide-spread and fairly benign impact of off-farm work:

“Especially with the elder children, I was not available at all on the farm. Because, well, I was either at my job or I was engaged for the community, and by the time I finally got home, they were in bed.” (Interview 03_SimonJ:38)

But chronic overwork, over long periods of time can lead to severe health problems, not least because the family may miss the early warning signs of exhaustion and the broader social norms emphasize a 'be tough and keep going' mentality. One interviewee explained how, due to financial difficulties, the farming couple decided to engage in processing and direct marketing, additionally to dairying. They thus produced vegetables, cheese, jams, as well as creams and lotions, which they sold in their farm shop and on farmer's markets. Additionally,

in summer, they also offered snacks and cold meals on farm. However, eventually his wife suffered from a burnout:

“Yes, well, my wife could not take it anymore, health wise. (...) I mean this came suddenly, one does not expect it, you don't see it coming. I mean she spent three weeks at the hospital. You don't see it coming, it starts slowly. (...) And I mean, that was a turning point, we had to face it: it could not go on like that. My wife could not work, and we had to take care of her too.” (Interview 07_HubertJ:96)

An excessive workload might also result from the sudden shift in availability of family labour. As one interviewee pointed out, the unexpected departure of the son – and heir to the farm – left the parents with a high workload, as well as the emotional turmoil linked to the conflict between parents and son and the now uncertain succession. As the farmer points out, such crises are endogenous, i.e. entirely unrelated to policy changes or market developments.

“Yes, my wife, she is not doing so well. (...) It's the nerves a bit. Yes, there is a strain on the family, which puts a lot of stress on us. Our son has left the farm. He went abroad and does not want to stay on the farm. He could not identify himself with the farm. He doesn't like what we're doing and how we're doing it. (...) Right now it is really difficult. We're having too much work, really too much. I can't blame the policies or anyone else, it is really ours, and ours to solve.” (Interview 05_PaulJ:44)

Another interviewee retold the chain of unexpected family developments, which resulted in health issues for both spouses. This example shows that exhaustion is often the result of a slow process, over a number of years, which imperceptibly erodes emotional buffers. Initially, he pursued an off-farm career while his father and his wife managed the farm. But as his father was diagnosed with cancer, his wife had to manage the farm alone. A few years later, they decided to start direct marketing of vegetables, when suddenly, the wife's mother became a case for nursing care. The workload of the wife became extremely high: she was involved in taking care of the dairy cows, producing vegetables, direct marketing, caring for her mother, as well as taking care of the children. As a result of working long hours and having to face the diverse demands of the various family members, the farm and the customers, she developed a depression. As the husband could not cope with the whole situation, he developed a drinking problem.

“My father got cancer, just as we had the farm well organised, workwise, that we had a good level of mechanisation. Just as the work was getting easier, my father more or less suddenly was no longer available. Yes, and then my wife had to take care of everything. The children, now the big ones, they were all still at school. I was promoted in the company and became manager. And then we had one more child. Then of course it was the perfect chaos, workwise. (...) And then my mother-in-law became a case for nursing care. And it was a real mistake that we did not react, the way we should have. My wife had to take care of her mother, of the direct marketing, and the family too of course. And then serious things started happening, and it progressed until she had a severe depression. (...) I saw it as an illness, but I did not really know how to cope with a depression. Then I myself got alcohol problems. I mean, I am really open about this. (...) But we learned from the crisis and said: let's change something. What are our options?” (Interview 03_SimonJ:20,26,28)

This interview also highlights the gender dimension of farm roles and thus workload. In Salzburg, as is typical for dairy farms, it is often the husband who pursues an off-farm job whereas the wife stays home to care for the farm. If additional – planned or unplanned – work needs to be done, she is often perceived as the one who will take care of it, as she's 'home anyway' and more flexible than the husband, especially if he has a full-time job with fixed working hours. However, the wife does not only have to cope with additional farm-related work, she also has to shoulder the vast majority of the work related to caring for family members, be it young children or elderly parents.

But, as another interviewee reported, her husband suffered from burnout, highlighting that men are not spared. The burnout resulted from a high workload, financial worries and a high commitment in various associations.

“My husband suffers from burnout. Just now he has not been able to work for 12 days. Since Saturday he is feeling better again. (...) We have a helper on the farm, because it’s not possible otherwise. He [husband] already spent six weeks in rehab, and in December he’ll have to go again. It is a stress for the whole family and for the farm. So we’re asking ourselves: how do we want to go on? But this year is over now, and we hope that the next year starts better. Because we both really enjoy it [farming].” (Interview 06_SimoneE:77)

As this quote shows, farmers often derive their identity from being tough and resourceful, from overcoming challenges through their determination and hard work. While such self-image and related personality traits may protect farmers against psychological distress (Judd et al., 2006), such social norms may also lead to downplaying the early warning signs, pushing farmers to ‘pull themselves together’ and ‘keep going’:

“And back then, I think it was 20 years ago, back then it [wife’s burnout/depression] was not recognized as a condition. Back then when someone broke his leg, people said: ‘That’s a wild one!’ And to her, they said: ‘Well, what’s up with you? Just laugh again!’” (Interview 07_HubertJ:96)

“We really have to face this [the husband’s burnout] in the family, but we are certainly not the only ones. Much of that is hushed up in farming because well, you do not need to call in sick.” (Interview 06_SimoneE:77)

Such social norms might result in individuals and families perceiving their problem not as a serious psychological illness but as a personal failure, feeling ashamed that they are not ‘strong enough’. This discrepancy between the seriousness of the health impact and how symptoms are perceived, points to the need for increased awareness for burnout and depression. Both informal and formal institutions could provide support and help the family to recognize early symptoms, to cope with the acute problems, and to coach them to re-evaluate their situation and discuss possible adaptations.

5. Discussion and conclusion

There is increasing evidence that family farms can become overburdened by the workload, and it is likely that on-farm diversification adds to that burden. Statistical data from Switzerland show that farmers work on average 10 hours more each week, compared to others who are also self-employed, and take only 7 days of vacation a year compared to 20 (BLW, 2013). Of the 31 farms surveyed, nearly a quarter reports that their quality of life is negatively affected by the current conditions on the farm, with the work burden being a major issue (Strauss, 2013). And the interviews conducted in Salzburg provide vivid examples of families struggling with the impact of unexpected developments in the family, and the impact of overlooking the early warning signs of work becoming ‘too much’.

This explorative study highlights that it is not sufficient to highlight the potential of diversity to enable technical synergies, contribute to stabilize the income of the farm family, and to encourage each family member to engage in activities that suits his/her interests and skills. Indeed, while diversified farms might allow spreading risk and building both buffer and adaptive capacity, diversification also raises the challenge of ensuring coherence and ensuring that the workload remains within limits. Diversification is thus not just about gross margins, but also about stress and long working hours.

Yet, diversified family farms are key for vibrant and prosperous rural areas. Indeed, the synergy between agriculture and rural development depends on healthy, entrepreneurial farmers, which provide a diversity of goods and services to both the urban and rural population. There is thus much to be gained in ensuring that farmers, while managing diverse activities on-farm and engaging in off-farm activities do not undermine their personal resilience.

It might be helpful to raise the awareness that a one-sided focus on economic issues can undermine social sustainability. As Farmar-Bowers (2010) proposes, family farm decisions need to be recast in a more holistic framework, which takes into account both *living* and *making a living*. Such a holistic framework would allow farmers to become aware and express their intrinsic motivation, and thus be able to reconsider how to achieve them, avoiding what Shiva (1993) called the 'TINA-syndrome' (There Is No Alternative). This requires an awareness of trade-offs when engaging in an additional activity, and the ability to readjust activities to avoid chronic work overload. Indeed while perseverance and determination are important to overcome difficult times and ensure the continuity of the family farm, so is the ability to recognise when change is necessary. To ensure farm resilience, the ability to buffer a shock through e.g. longer work hours, is not enough, it also needs the ability to adapt – or even transform – farm activities (Darnhofer, 2014).

Through a closer analysis of how on- or off-farm diversification can strengthen or erode the resilience of family farms, three aspects will need to be better understood: the interdependencies between the farm and the family, the role of endogenous vs. exogenous disturbances and the sociological processes underlying resilience.

As research in social-ecological resilience has shown, systems need to be understood as part of a panarchy (Gunderson and Holling, 2001). The concept of panarchy points out that what happens at one scale can influence or even drive what happens at another scale, so that it is not possible to understand or successfully manage a system by focusing on only one scale (Anderies et al. 2006). Thus, if the family farm is the focal scale, we need to understand how it is influenced by what happens at the level above (e.g. regional dynamics) as well as the level below (i.e. the farm family and its individual members). A prosperous and resilient farm thus builds on a prosperous and resilient family. A prosperous family is one where each member can flourish, experience social cohesion and find higher levels of well-being, while reducing their material impact on the environment Jackson (2009: 35ff). Chronic work overload is obviously not conducive to prosperity.

Understanding the role of the family that manages the farm highlights that a farm need not only be able to buffer external disturbances (e.g. the volatility of milk prices or the impact of a drought), but also be able to buffer internal disturbances (e.g. a family member that can no longer contribute labour). It thus highlights that for a family to be resilient, it not only needs to adapt to external changes, but also to the changes within the farm family, e.g. as a result of shifting labour availability or shifting preferences by family members. It also highlights that it is not only the sudden shocks (e.g. a family member being diagnosed with cancer) that the farm needs to be able to adapt to, but also the erosive effect of slow processes (e.g. the cumulative effect of economic uncertainty and a high work load, especially over the long term).

Understanding the central role that the farm family plays also implies that the contribution of diversification to securing family income – while doubtlessly being important – cannot be the only issue taken into account. Indeed, the one-sided focus on farm economics leaves the social dynamics of family farms unexplored. Taking the social dimension seriously would highlight how adjustment, reorganisation, and transformation can involve significant struggle and pain at the individual level (Cote and Nightingale, 2012). It might also highlight the role of individual perception (e.g. of work overload) and how it may be overshadowed by social norms that push farmers to 'keep going'. Raising the awareness for the downside of such norms might encourage farmers to actively manage workload and stress levels, acknowledging the limits of each family member. They may then reconsider current on- and off-farm activities more often, and be creative about how the farm might be adapted or transformed to better suit current constraints, available labour and individual preferences.

References

- Anderies, J., B. Walker, and A. Kinzig (2006). Fifteen weddings and a funeral: case studies and resilience-based management. *Ecology and Society* 11(1): 21. [online] URL: <http://www.ecologyandsociety.org/vol11/iss1/art21/>
- BLW (2013). *Agrarbericht 2013*. Bern: Bundesamt für Landwirtschaft.
- Bryden J.M., C. Bell, J. Gilliatt, E. Hawkins and N. MacKinnon (1992). *Farm household adjustment in Western Europe 1987–1991*. Final report on the research programme on farm structures and pluriactivity, Luxembourg: ECSC-EEC-EAEC.
- Berkes, F. (2007). Understanding uncertainty and reducing vulnerability: lessons from resilience thinking. *Natural Hazards* 41: 283–295.
- Cote and Nightingale (2012). Resilience thinking meets social theory: Situating social change in social ecological systems. *Progress in Human Geography* 36: 475–789.
- Darnhofer, I. (2010). Strategies of family farms to strengthen their resilience. *Environmental Policy and Governance* 20: 212–222.
- Darnhofer, I. (2014). Resilience and its relevance for farm management. *European Review of Agricultural Economics* (submitted).
- Darnhofer, I., S. Bellon, B. Dedieu and R. Milestad (2010). Adaptiveness to enhance the sustainability of farming systems. A review. *Agronomy for Sustainable Development* 30: 545–555.
- Dedieu, B. and G. Servière (2012). Vingt ans de recherche-développement sur le travail en élevage: acquis et perspectives. *INRA Productions Animales* 25(2): 85-99.
- Farmar-Bowers, Q. (2010). Understanding the strategic decisions women make in farming families. *Journal of Rural Studies* 26: 141–151.
- Fiorelli C., Porcher J., Dedieu B. (2007) Pourquoi faire de l'élevage quand on a un autre travail? *Rencontres Recherches Ruminants* 14: 389–392.
- Gunderson, L. and C.S. Holling (Eds.) (2001). *Panarchy. Understanding transformations in human and natural systems*. Washington: Island Press.
- Jackson, T. (2009). *Prosperity without growth. Economics for a finite planet*. London: Earthscan.
- Judd, F., H. Jackson, C. Fraser, G. Murray, G. Robbins and A. Komiti (2006). Understanding suicide in Australian farmers. *Social Psychiatry & Psychiatric Epidemiology* 41:1–10.
- Madelrieux S., Dedieu B. (2008) Qualification and assessment of work organisation in livestock farms, *Animal* 2: 435–447.
- Penrose E. (1997). The theory of the growth of the firm, in: Foss N. (Ed.), *Resources, firms and strategies. A reader in the resource-based perspective*, Oxford University Press, Oxford, pp. 27–39.
- Shiva, V. (1993). *Monocultures of the mind. Perspectives on biodiversity and biotechnology*. London: Zed books.
- Steger, M. (2013). *Globalization. A very short introduction*. Oxford, Oxford University Press.
- Strauss, A. (2013). Lebens- und Arbeitsqualität auf österreichischen Milchviehbetrieben – Ein Beitrag zur Bewertung der sozialen Nachhaltigkeit. Masterarbeit, Universität für Bodenkultur, Wien.
- Stirling, A. (2007). A general framework for analysing diversity in science, technology and society. *Journal of the Royal Society Interface* 4: 707–719.