From Food Producer to Landscape Preserver: A Swiss Perspective on the Future of the Balinese *Subak*

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Abstract

The future of Bali's agriculture is at a cross-roads. Tourism and urbanisation are slowly but steadily dismembering one of the cornerstones of Balinese culture, the *subak* and its distinct ways of sharing water, cultivating rice and beautifying the landscape. A combined effort is required of farmers, the government and society to rethink and reappraise the value of agriculture for the Balinese people and the economy. Such a change of perception needs to consider the question of adequate compensation for the work farmers do in the fields, grooming 1000 year old rice terraces, and planting, irrigating, and celebrating rice. To place Bali in a global context, I examine Switzerland's protective agricultural policies, rural development planning and community-led initiatives which may offer some unconventional but pragmatic solutions to turn the tables for Bali's rice sector protecting the *subak* institution. At last, I envisage a future for the *subak* and its members, an active and proud farming community, not only famous rice producers and fair water sharers but also recognised and appraised for their services to society as cultural landscape preservers.

Keywords: subak, Switzerland, direct payments, geographic indication, regional development planning, cultural landscape preservation.

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1. Introduction

The future of Bali's agriculture is at a cross-roads. Urbanisation, rural diversification and tourism are encroaching into the pristine rice terraces of Bali. Once one of the mainstay in Balinese culture, the Balinese rice growers associations called *subak* are threatened to disappear, in particular near urban and tourist centres, and with it, not only locally produced rice, but also the *subak* cultural knowledge and the unique cultural landscape. The diverse challenges *subak* face today such as an aging farming community, better off-farm employment, better equipped rivals competing for access to water and land, land fragmentation, and increasing transgression of weak land protective regulations have been the subject of various journal and media articles as well as conferences.[1]

In recognition of the many threats to the *subak*, several local and regional level initiatives have sprouted to support farmers in finding new ways to make a profit from growing rice and with it protect and preserve the *subak* system. There are small projects in several regions, where farmers groups have come together to grow specialty produce and offer farm adventures linking to ecotourism.[2] Likewise, through the combined efforts of government and academics, several *subak* and *subak* related areas have become listed as World Cultural

1 See for example Strauss, 2011, 'Water Conflicts among Different User Groups in South Bali, Indonesia.' Human Ecology 39 (1): 69–79; MacRae and Arthawiguna, 2011, 'Sustainable Agricultural Development in Bali: Is the *Subak* an Obstacle, an Agent or Subject?' Human Ecology 39 (1): 11–20; Lorenzen and Lorenzen, 2011; Lorenzen R. P., 2012; Sarad Majalah Gumi Bali journal, various issues, 2001; Erviani, 2009 (Jakarta Post), Bali Daily and Bali Post, several issues, 2012; Workshop 'Revitalisasi Subak', organised by the Bali provincial Department of Culture, Udayana University, and FKPPB (Forum Komunikasi Pemberdayaan Petanian Bali).

2 See for example Jaringan Ekowisata Desa (Village Ecotourism Network), http://www.jed.or.id/, accessed 21/10/13; and Somya Pertiwi, a farmers group in Mengesta, Tabanan, known to the author, which has been growing organic rice since 2005, functions as a training center and visiting place for tourists to learn about organic farming and the subak.

Heritage.[3]

However, farmers alone cannot change the future of the *subak*. In my PhD dissertation which examines the resilience of the Balinese *subak* to contemporary resource pressures I discuss three scenarios where the *subak* will be in 25 years' time (Lorenzen, 2012).[4] Accordingly, the trajectory of the *subak* will depend not only on farmers' skills and capacities,but also on the government's ability to implement and enforce protective regulations, as well as society's attitude towards farming and the willingness of consumers to pay more for locally produced rice.

An effort is needed that includes all layers of society, especially those who live in urbanised areas to rethink and re-appreciate agriculture as the provider of food and conservator of the cultural landscape. Such a change of perception needs to consider the question of adequate compensation for the work farmers do in the fields, grooming 1000 year old rice terraces, and planting, irrigating, and celebrating rice. Or else, farmers and their successors will increasingly turn their backs on farming, and with it their cultural heritage will be lost: a scenario beyond doubt that is undesirable for Bali's economy and society.

To place Bali in a global context, I propose a comparison with Switzerland, a country, which is in many ways at the other end of the spectrum. Here, agriculture makes up a mere 0.7 per cent of the GDP (BFS, 2013).[5] Nevertheless, Switzerland's

3 UNESCO World Hertitage List: "Cultural Landscape of Bali Province: the Subak System as a Manifestation of the Tri Hita Karana Philosophy", http://whc.unesco.org/en/list/1194, accessed 21/10/13.

4 The three scenarios developed are: (1) disintegrated water user associations; (2) Japanese model with paid ecosystem services; (3) combined agribusiness and ecotourism model; for more details see Lorenzen R., 2012; and Lorenzen, forthcoming.

5 In Bali, agriculture's GDP share is currently 18 percent (BPS Bali Province, 2013).

protective attitude towards the agricultural sector as well as government and community-led innovative initiatives for rural development and protection of agriculture may offer ideas to ensure a promising future for Bali. In the following sections, I first discuss two approaches that the government could initiate, while the latter one discusses an initiative that can begin as process of change within the community of a single *subak*.

2. Switzerland's Agricultural Sector and Related Protective Policies

Swiss agriculture is considered small-scale with an average farm size of around 20 hectares.[6] Given the climatic conditions and topography, most of the land is farmed as pastures and meadows. Only one quarter is grown with cereal crops and vegetables, and this mainly in the lowlands (Swissworld, 2013). With a substantial focus on feed production, Switzerland's main agricultural produce is meat and milk. Switzerland is also a pig and poultry producer. About 60 per cent of the in-country consumption is covered by Swiss agriculture (BFS, 2013). The GDP share sank continuously since the 1990s from 2.3 per cent to 0.7 per cent in 2011.

Farms are capital-intensive with low to medium labour input and highly mechanised. Most farmers in Switzerland use the latest technologies for their farm management and equipment such as computers and the internet (BFS, 2013). While until the 1990s farming was the main income for most farming families, it changed thereafter to farming becoming more of a side business (Baur, 1996). Today, less than half of all farmers work full time on the farm.

Table 1 presents an overview and comparison of some facts on population, GDP shares and agricultural production between

6 Farms used to be much smaller 10 years ago with an average of around 10 hectares. Although farm size has been increasing since, farms in total are on the decline (BFS, 2013).

Switzerland and Bali. Accordingly, Bali is significantly more densely populated than Switzerland.[7] However, if considering that a third of Switzerland is covered by uninhabitable mountains, its population density becomes comparable to that of Bali. GDP and labour force share for agriculture are clearly less in Switzerland than in Bali. Nevertheless, while Bali's agriculture sector GDP and labour force share have declined, the services sector grew considerably in the last couple of decades, drawing closer to a situation somewhat similar to that of a developed country such as Switzerland.

Table 1 - Some Facts about Switzerland in Comparison to Bali

	Switzerland	Bali
Urban population (% of total)	74 (2011)	44 (2010, all Indonesia)
Total population (million)	7,9 (2000)	3,9 (2010)
Total area (km2)	41,285	5,636
Population density (inhabitants/ km2)	191	690
Area considered rural (%)	75	
GDP Share (%)		
Agriculture	1.2	16.8
Industry	27.5	16.9
Services	71.3	66.3
Labour force by occupation (%)		
Agriculture	3.4	25.2
Industry	23.4	22.5
Services	73.2	52.3
Arable Land area	36.9%	64%
Main Agricultural Produce	beef, pork, milk, cereals, potato, sugar beet	rice, cassava, banana, beef, poultry, fish
Export Commodities	agricultural products, machinery, chemicals, metals, watches	fish and shrimp, garment, woods, jewellery, furniture

Sources: http://www.gfmag.com/gdp-data-country-reports/168-switzerland-gdp-country-report.html; http://www.indexmundi.com/switzerland/economy_profile.html; http://bali.bps.go.id; http://www.bps.go.id/; https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html.

7 According to the OECD (2006: 24, 26), both Switzerland and Bali can be classified as urban regions with more than 150 inhabitants per square kilometre.

Environmental considerations in Agricultural Policy

Similar to Bali, Switzerland has a cultural landscape that is famous around the world for its neatly trimmed meadows and well-groomed fields, grazing cows and horses on green pastures intermingled with wooded hills, pristine rivers, mountain slopes and ridges and traditional style rural settlements. With its preservation in mind, Switzerland became one of the first countries to consider environmental restrictions upon agricultural production.

Up until the early 1990s Switzerland's agricultural policy focused primarily on ensuring supply of essential agricultural goods which was based on the experiences of the Second World War. Farmers were paid subsidies per unit produced with the aim of supporting a productive agriculture (Hediger, 2006). The 'fixed prices and guaranteed deliveries' policy intended to ensure continuous food supply to the people in Switzerland even in times of crisis (LID, 2013).The costly policy eventually led to massive overproduction, high pollution and deteriorating incomes (Buchli and Flury, 2005). While internationally the World Trade Organisation was urging countries to reduce their trade barriers, in particular in agriculture, Switzerland began to draft a new agricultural policy that integrated multifunctionality[8] and sustainability as guiding principles to officially recognise agriculture's role beyond mere food production (Hediger, 2006). In addition to ensuring food security, the new policy objectives also included

8 Multifunctionality recognises and emphasises the multiple functions of agriculture, similar to that of ecosystem services. The OECD (2001: 9) states, that "beyond its primary function of supplying food and fibre, agricultural activity can also shape the landscape, provide environmental benefits such as land conservation, the sustainable management of renewable natural resources and the preservation of biodiversity, and contribute to the socio-economic viability of many rural areas." The concept of multifunctionality was introduced by the Swiss delegation at the International Uruguay Round Agreement on Agriculture in 1995 as some would say as justification to legitimise paying its farmers and indirectly stall WTO's push for market liberalisation (Hediger, 2006).

services which cannot be paid for through the market such as protecting natural resources and the traditional landscapes and contributing to the economic, social and cultural life in rural areas (Schelske, 1998; Buchli and Flury, 2005).[9]

Since Switzerland is a direct democracy, it was the population that voted on the incorporation of the new policy into the agricultural law. The bill was accepted with more than 75 per cent of votes in favour and became effective in 1999 (BLW, 2013). The reformed policy's most important instruments were direct payments, which created the necessary incentives for farmers to continue to grow but with more sustainable methods, and facilitated the transition from production based subsidies towards a more globally open market as requested by the World Trade Organisation.

At around the same time the government created the Swiss Foundation for the Conservation of Cultural Landscapes (FLS) with the aim to conserve and rebuild historical, cultural, natural landscapes as well as traditional and sustainable agricultural management practices along with historical buildings and roads.[10] The foundation specifically supports landscape protective projects where more economical projects threaten to destroy a particular landscape. Receivers of such payments are private persons, foundations and administrative districts at different levels (local, district and regional). The foundation receives money from the different state level administrations as well as communities, and private entities (enterprises and individuals). Since its beginning, the FLS has financially supported more than 2000 projects all around Switzerland which also includes the conservation of its culinary

9 The new agricultural policy was incorporated into the Swiss Federal Constitution Article 104 on agriculture.

10 The 'Fonds Landschaft Schweiz' was established in 1991 as part of the 700 years Confederation of Switzerland celebrations. For more details, visit their website: http://www.fls-fsp.ch/

heritage (FLS, 2013).

The heightened environmental awareness led to the official recognition of environmentally friendly production. In 1995, a regulation on organic production became effective which for example restricted the use of the word 'organic'. With the regulation in place, only goods that contain a certain minimum percentage of organically produced and certified ingredients can be labelled 'organic'.[11]

3. Direct payments

The newly introduced direct payments replaced the previous subsidies system separating price from income policy. Now the payments were directly linked to the area cultivated instead of production numbers. Incentives for overproduction and negative impacts on the environment were reduced as the new payments were also linked to ecological compliance regulations. Nevertheless, the payments ensured that Swiss agriculture could continue to survive and preserve the cultural landscape amid globalising agricultural markets and limited competitiveness of Swiss farm produce (Bokusheva, Kumbhakar and Lehmann, 2012).

The two types of direct payments, general (1) and ecological compensatory payments (2), compensate farmers for their efforts in ensuring food supply to the Swiss people, maintaining the cultural landscape and rural infrastructure, and applying more sustainable farm management practices such as for example reduced use of fertilisers and pesticides, regular crop rotation, and soil and biodiversity protective measures (Bokusheva, Kumbhakar and Lehmann, 2012; BLW, 2013). Since 1999, the payments are bound to a proof of ecological performance which prescribes minimum standards that have to be observed (Figure 1).

11 Today, the market share for organic products is about 6 per cent in Switzerland.

Figure 1. the Swiss Direct Payment Scheme

Ecological compensatory contributions	
Arable land, permanent crops	Animal Husbandry
Ecological compensation area Organic farming Low-input cereal production	Animal friendly housing Regular outdoor exercise
General direct payments	
Arable land, permanent crops	Animal Husbandry
Area payments per hectare	Roughage consuming animals
In difficult production conditions:	
Contributions to Hillside farming Hillside vineyards	Hillside animal husbandry
Proof of ecological Performance	

Source: adapted from Pfefferli, S., 2011.

The ecological compensatory payments are paid to farmers who participate in recognised but voluntary programs and those who exclude a minimum of 7 per cent of their farm land from intensive cultivation. The latter are so-called ecological compensation areas (ECA) which include traditional landscape elements or new types of biotopes. The ECA are strictly monitored with restriction on the amount and frequency of fertilisers and pesticides applied as well as mowing frequency (Jeanneret et al., 2003).[12] By ad hoc inspections adherence to regulations is monitored. Penalties include reimbursement of received payments or banning participation in the payment program depending on the severity of the violation. Presently, 80 per cent of the total payments made to farmers are general direct payments and 20 per cent are ecological compensatory payments (Bokusheva, Kumbhakar and Lehmann, 2012).

The new agricultural policy for 2014-17 that is currently developed foresees a more differentiated approach to the direct

12 The main purpose of the ECA is to promote biodiversity of flora and fauna and reduce fertiliser levels in waterways. The ECA also serve as habitats for natural enemies and thus indirectly contribute to pest control in crop management.

payments. In future, the direct payments will include separate contributions for the preservation of the cultural landscape, food security, biodiversity, landscape quality, and type of production system as well as rewards for increased resource efficiency (BLW, 2013c). Most importantly, the payments are now linked to farm household structure, such as for example farmers' age[13] and requirement of some type of farm-specific training.

Several studies undertaken since the introduction of the direct payment system have confirmed their positive effect, such as compliance with the imposed environmental regulations, decreased farm production output, reduced fertiliser input into agriculture and water ways and increased biodiversity (Mieville-Ott, 2002; Jeanneret et al., 2003, Bokusheva, Kumbhakar and Lehmann, 2012). Challenges that remain are the need for more research into the linkages between multifunctionality and rural development as well as a better understanding and appropriate remuneration of non-marketable services (Hediger, 2006; Mieville-Ott, 2002). Mieville-Ott (2002) emphasises that the valuation of non-marketable services is important for consumers as well as the famers themselves to understand why they are doing what they are doing.

Besides the direct payments, farmers can also apply for specific financial support to the government to improve their economic situation. Financial assistance is given in form of credits and interest-free loans to serve as start-up for young farmers, to finance farm land and building improvements, or diversification, or implement environmental protective measures (LID, 2013; Admin.ch, 2013). In 2011, for example, most of the investment assistance was used to improve farm buildings, followed by start-up loans for young farmers and

13 Farmers have to be below 64 years of age to receive payments from the government.

farm diversification (BLW, 2012). Other supporting measures which the government facilitates are professional education structures, agricultural extension services and research and development.

Overall, support to Swiss farmers by the government is high. On average more than 50 per cent of a farmer's income is made up of government support payments (OECD, 2011). Although such backing may so far be unthinkable for farmers in Bali, the Swiss example may nonetheless present ideas in which direction Bali's agricultural policies could be heading to protect its agricultural production and cultural heritage.

Figure 2 The Multiple Functions Of Agriculture Promoted Through Direct Payments

Source: Pfefferli, 2012, adapted.

Potential for Bali adopting a direct payments system or elements of it

The Indonesian government has not yet integrated any specific environmental and socio-cultural considerations into its

agricultural policy. However, the role of agriculture and its multiple functions, in particular of irrigated rice cultivation, have been the topic of several workshops, seminars and academic research papers in recent years in Indonesia (see for example Arthawiguna et al., 2007; Sutawan, 2004 and Agus et al., 2006). In particular, in Bali, approaching the future of rice cultivation with a multifunctional approach makes sense given that competition for land is high and current added value of agriculture low. A valuation of non-marketed social, ecological and economic values of rice cultivation, such as for example, socio-cultural values and traditions of rural communities, employment opportunities and preservation of natural resources, could help to halt the current rapid conversion of agricultural land for other purposes. At the same time, creating incentives to preserve the beautiful rice terraces will keep the tourists coming to the island and with them the tourist dollars.[14]

As shown in the Swiss example, the binding of compensation payments to strict environmental and socio-cultural regulations as to how these non-marketed values are to be preserved could be a way forward. Minimum standards could include rotation of rice cultivation with *palawija*, maintenance of the rice terraces, continued sharing of water and upholding of the *subak* ceremonies. Additional standards could include the growing of local rice varieties, reduction or abolishing of the application of chemical fertilisers and pesticides[15] and conversion to organic farming practices (Table 2).[16]

14 The OECD report on multifunctionality(2010), for example, establishes policy principles for a most cost-effective way.

15 Similar to Switzerland, Bali has a problem of over-fertilization of its waterways, such as groundwater pollution, eutrophication of water bodies and coral reef degradation (Lansing et al., 2001; Arthawiguna, 2002)

16 The recent establishment of SawahBali foundation is a step towards this direction; although by a private initiative it can eventually be incorporated into government policy. For more details see http://www.sawahbali.org/, accessed on

Table 2 Suggested Compliance Standards for Financial Support

Minimum standards		
Make crop rotation (padi-padi-palawija) stringent	Maintain rice terraces	Continue *subak* institutions, such as sharing water and upholding ceremonies
Additional standards		
Growing local rice varieties	Reduce or abolish use of chemical fertilisers and pesticides	Grow certified organic rice

These days, *subak* already get yearly payments from the government to invest into the *subak* infrastructure. The payments could be made contingent to a set of standards that *subak* or individual farmers have to comply with. Individualised compensation could be developed in form of guaranteed higher prices for a particular rice variety produced. Interesting are also the restrictions imposed on the farm household structure in Switzerland which may encourage a debate of what type of farmer does Bali want to promote. For example, should farmers attend regular training to adapt their cultivation and irrigation techniques? Or, should there be an age limit to encourage young people to become farmers?

In Switzerland, however, farmers are not organised in groups such as the *subak*. Swiss farmers work on an individual basis.[17] In Bali, rice farming is organised in *subak*, thus making such a valuation more complex. For instance, so far, the *subak* institution is not involved or only has limited influence in crop management, harvesting, and marketing of rice (Lorenzen, 2012). Thus, standards related to crop production and marketing such as the suggested additional standards could more likely be met on an individual level. The proposed minimum standards,

20/2/2014.

17 The grazing of cattle on the summer pastures and the managing of the irrigation to water the pastures up in the Swiss mountains, where common property resources are managed cooperatively, is somewhat an exception to this.

on the other hand, could be applied to the entire membership of the *subak* given that they relate to the general institutional setup.

Questions will need to be explored as to how such new regulations and linked compensations impact on the *subak* institutional setting. Likewise, regional differences will need to be taken into account as *subak* in peri-urban areas and near tourist centres are faced with different pressures compared to those *subak* in the uplands. How far can institutional settings be adapted without being corroded and are these desired by the farmers and the general public?[18]

A maybe simpler approach to consider as means of protecting local agricultural protection is geographic labelling which I discuss in the following section.

4. Labelling of Agricultural Produce – AOC and Swiss Made

There are several labelling initiatives in place worldwide and probably more densely occurring in Europe where consumers can choose from a wide variety of certified foods and service. Geographic origin labels such as the 'Appellation d'origine controlle' (AOC)[19] label and the 'Swiss Made' label are government programs which aim to protect product quality and origin. They are in a sense a type of intellectual property rights (Boisvert, 2006). The AOC label originates from France, yet is widely used in Europe, mainly for cheese and wine products. The Swiss Made is a similar type of label which is applied to agricultural as well as to other products.[20]

18 For a more detailed discussion of possible futures of the subak, authenticity and desirability see Lorenzen, R.P., forthcoming.

19 Generally translated into English as Protected Designation of Origin (PDO), also known as Geographic Indication.

20 There has been an ongoing debate about Swissness between the Swiss national council and council of state which has only recently been settled with an agreement on a definition of how much Swiss can be labelled 'Swiss made' http://www.srf.ch/news/schweiz/session/swissness-ist-definiert-nationalrat-lenkt-ein, http://www.

The AOC label is used on speciality produce, such as for example 'Roquefort' cheese[21] or 'Bordeaux' wine, to avoid these products being produced elsewhere with ingredients originating from elsewhere and a possible lower quality. The AOC is mainly used on produce that has been processed. For a product to be AOC labelled the entire production, processing marketing chain is controlled to ensure quality in every unit of good produced (Albert, 1998). The Swiss Made label also includes the workmanship skills. For processed food to be labelled 'Swiss made' 60 to 80 per cent of its ingredients has to originate from Switzerland depending on the processing degree of the end product.

Both, the AOC and the Swiss Made label are government initiatives as opposed to other labels such as Organic, Fairtrade, or Rainforest Alliance which are private initiatives. In Europe, it is the agricultural department of each member state that is in charge of providing AOC labelling. The process for acceptance to gain the AOC label can take several years yet members can benefit from government assistance in improving maintenance of quality of their produce while acquiring the label.

With the product's speciality and name protected, so is the area where the product is produced often alongside historic and cultural traditions surrounding the production. Geographical indication labels are seen in Europe as favourite means to maintaining agricultural profitability, in particular in marginal areas where cultivation is unfavourable due to climatic or economic circumstances (Boisvert, 2006).

Protecting and Marketing Balinese Produce through Labelling

Protecting the origin of products that the *subak* produces could

tagesschau.sf.tv/Nachrichten/Archiv/2012/03/15/Schweiz/Session/Swissness-Debatte-Wo-Schweiz-drauf-steht-soll-Schweiz-drin-sein, accessed on 14/9/2013

21 Roquefort cheese is a type of blue cheese made of sheep milk which is produced in France in the region of Roquefort. For more information on the cheese and the village visit http://www.roquefort.fr/, accessed on 21/1013.

help increase the marketing value and therefore increase a farmer's income. For instance, red rice from Jatiluwih already has a name. The red rice label could be expanded or specified and each region where red rice is being produced could have its own label of origin. The labelling could also apply to processed rice products and indirectly increase incentives for farmers to invest in diversifying the range of products (such as for example red rice tea, milk, or flour) and thus create additional business for the farming household. Protecting specific rice varieties creates incentives to continue to grow them and as such, indirectly also helps to protect the genetic diversity of rice and the way in which it was cultivated. Boisvert (2006) highlights that such designated origin labels can protect the traditional knowledge used in the production process, create economic rewards and reduce the chance of commercialisation of the culture and produce. In Thailand for example, there are efforts underway, to protect the fragrant Jasmine rice after the Basmati debacle in India.[22]

As a matter of fact, Indonesia already does have its own law and regulations on geographical indication as stipulated in Law No. 15 of 2001 and Government Regulation No. 51 of 2007. The regulation applies to food and non-food products. An application supported by a book of requirements detailing the defining characteristics has to be made which then goes through an administrative examination process before a protection certificate can be obtained.[23] So far, around 20 products are registered and have the Geographic Indication protection by

22 The patenting of Basmati rice by an American company in the US in 1997 (which was subsequently erased again) has led to a huge outcry in India given that Basmati is a particular rice variety grown in the Northern parts of India and in Pakistan, (http://www.greens.org/s-r/17/17-20.html, accessed on 17/9/2013).

23 For more details see "IndikasiGeografis," DirektoratJenderalHakKekayaanIntelektual, KementrianHukumdanHakAsasiManusia at http://www.dgip.go.id/indikasi-geografis, accessed on 20/2/2014.

the Indonesian Government.[24]

Having discussed possible government level interventions, the next section looks at a tool communities could use to think about and create a valuable future for the *subak*.

5. Leitbild

The rural space is changing, becoming more multifaceted and no longer equal to agriculture. This rural transformation process happens across the world as well as in Bali. Rural settlements are growing taking on the character of little cities. People are commuting from living to work place on roads criss-crossing the country side. Agriculture and post-harvesting industries produce and deliver food to growing cities. At the same time, agriculture's role as maintainer and designer of a specific cultural landscape and also increasingly recreational space becomes more apparent. Yet, the rural transformation process is not only positively impacting on the rural economy. The growing urban sprawl and densification of human activities and people puts a strain on infrastructure, environment and human health, which in turn creates increasing costs for state and district governments' finances.

In Europe, these rising costs and the dwindling rural space have been felt particularly strongly giving cause to the emergence of new regional and rural planning and development tools. These new approaches encourage the active participation of the community in decision, planning and designing processes of regional and district governments. The community together with the government becomes proactive in conserving rural space for the future welfare of the society as a whole (ARGE, 2013). These processes of rural village renewal

24 "RI-UE Sepakat Kerjasama Perlindungan Indikasi Geografis Indonesia,"Sinar Indonesia Baru, 8 February 2014, at http://hariansib.co/view/Luar-Negeri/4264/RI-UE-Sepakat-Kerjasama-Perlindungan-Indikasi-Geografis-Indonesia.html accessed on 19/2/2014

originate from Germany and Austria where they have become an integral part of government regulations.[25] In Switzerland, participatory regional development planning was introduced in the 1990s, applied mainly to the poorer and economically disadvantaged mountainous regions (Koerner, 2014). The development of a regional plan was tied to financial support to the communities, though the approaches and degree of participation of the local communities varied from region to region. Although, these days, regional development planning is back in the hands of regional public administrations with little input from local communities, rural village renewals largely based on individual initiatives of rural communities and district governments continue (Koerner, 2014).[26]

One of the guiding tools that were developed as part of this process is the creating of a '*Leitbild*' roughly translated from German as 'consensual concept' or guiding vision. A *Leitbild* is a kind of an ideal view of the world, how it should be. A *Leitbild* definition usually includes a mission (who), a vision (what) and values (how) (Krems, 2012).

Leitbild
(1) a **mission**: *Who are we and what is it we are here to do?* (2) a **vision**, *What is it we want to achieve?* (3) **values**, '*How are we going to do this?*

Figure 3 - Leitbild Definition

25 Village renewal, translated from German "Dorferneuerung". See for example: Forschungsvorhaben "Dorferneuerung 2020 – Zukunftskonzeption und –strategien der Dorerneuerung in Bayern, 2013 (website). http://www.landentwicklung-muenchen.de/forschung/forschungsberichte/dorferneuerung/forschungsvorhaben_DE.html, accessed on 17/9/2013., and http://www.landentwicklung.org accessed on 17/9/2013.

26 Switzerland became a member of the European Association for Rural Development and Village Renewal in 2009. http://www.geomatik.ch/fileadmin/redaktion/download/2009/Fach/FA_7_2009_6.pdf, accessed on 20/02/2014

The *Leitbild* approach has traditionally been used within corporations, institutions and in government but can also be applied to a region or a village. A good *Leitbild* helps to inform policy development, motivates people to be part of it and also acts as advertisement agent (Krems, 2012). It is a more holistic and participatory process of defining goals for development. Importantly, a *Leitbild* discussion ideally results in clearly defined goals, and provisions and projects that help to work towards these goals. According to ARGE (2013) the creation of a *Leitbild* for rural villages and regions can create new but realistic perspectives of how a village or region can develop to become a prosperous place worth living in.

A *Leitbild* discussion is similar to the building of scenarios or narratives. Scenarios examine threats and possibilities and show potential trajectories a region, a company or similar can take that can include desired and less desired futures (Lorenzen, 2011; Lorenzen, forthcoming). Another similar tool is the construction of narratives. Narratives are stories with a beginning, middle and end, looking at past, present and future. Soliva (2007) underlines the importance of narratives in drawing together different stakeholders' values, views and ideas about a region and its development or change. Yet, in contrast to scenarios and narratives, the *Leitbild* approach applies exclusively a positive spin focusing on desired outcomes and envisioning a single common future.

In Einsiedeln, a small country town and tourist destination in Switzerland, around 120 people of the local community worked together to develop a *Leitbild* for their town and surrounding region (Figure 4). They were invited to participate in different working groups which consisted of government, private business and local community members. The process involved the identification of several focal areas on which the working groups elaborated further (Figure 5). As a result of this process, Einsiedlen, once a poor mountain village,

has become successful in promoting its town and region and increasing regional income for the benefit of the community.

> *"Einsiedeln is a place to live in and a place for recreation with distinctive appeal. We achieve this through a balanced development of Einsiedeln's assets as a place of residence, of work and of business opportunities as well as a tourist destination…"*

Figure 4- Example Einsiedeln - 'Leitidee' - Guiding principle/idea

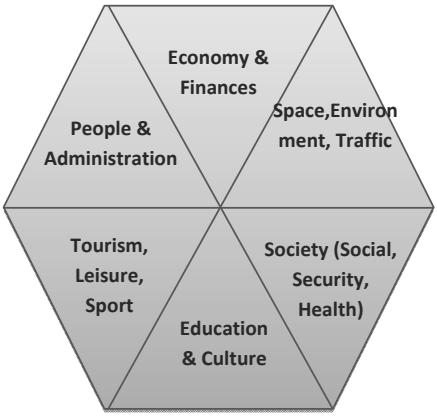

Figure 5- Example Leitbild District Einsiedeln - Domains of Focus[27]

Important in the development of a *Leitbild* is the inclusion of all possible stakeholders, interest groups, residents, local businesses and government representatives. One of the major challenges, as Koerner (2014) emphasizes, is to ensure that all different perspectives are actually included and to be aware of time and resources constraints of parts of the community which can lead to a miss-representation, if not considered. Not all layers of the community have the same capacities to make themselves heard and participate. Allowing broad-

27 Einsiedeln is famous for its monastery, the Benedictine Abbey.

spread participation in the process is the key to more valuable outcomes for people to feel that they have become part of and own the vision and the results. A common vision or concept for development allows the definition of clear goals and strategies of how to achieving these goals.

How to apply the *Leitbild* approach to the *subak*?

Developing a common vision or concept for the future could be a way to create new meaning in the value of the *subak*, being a farmer and growing rice. Becoming aware of one's role in the food supply chain could help to infuse new purpose and meaning in an otherwise depreciated profession. Envisioning a common future starts with the individual's own vision for the future which can be discussed and tested within the group and eventually extrapolated and fine-tuned to become a *Leitbild* for the *subak* or a region.

The process of developing a *Leitbild* could include but not be limited to only farmers, but adjacent village residents and industries, religious leaders as well as government representatives (such as for example, agricultural extension service, planning and taxation office, and public works department). The process could be focusing initially on a discussion about the key characteristics of a *subak* or a region of several *subak* (*subak gede* or *pasedahan yeh*) as well as about what makes the particular *subak* or *subak* region unique and why this uniqueness needs to be protected, preserved and maintained. A further step would be to define different focus areas, such as for example, landscape conservation, diversification of production, and youth development to name a few and discuss what would need to be achieved in these different areas to reach the common *Leitbild*.

Traditional villages in Bali have proven to be strong actors when it comes to tourism development projects, with many of them intervening and gaining a profit from such investments

(Warren, 2005). Similarly, the *subak*, with a better awareness of touristic developments taking place in the vicinity can take a more active role in taking out a share of the profit. Important is that as many stakeholders as possible join the round table discussion to include as many differing aspects for a truly representative and participative process. Warren (2005), for example, stresses that aims of social justice and environmental sustainability can only be reached by constructive engagement of different constituencies and forms of governance.

Nevertheless, the *Leitbild* discussion can be undertaken with the *subak* constituency only and later be expanded to include further views and values, if needed. The *subak* is an independent organisation within Balinese society with its own rulebook and a budget to allocate without outside intervention. It is within this frame of independency that common goals can be defined and realised.[28] The process of developing a common *Leitbild* for the future may be a beginning.

6. Conclusion

This paper has attempted to cross-compare Switzerland with Bali, two small 'islands' in the global market of agriculture. Although, in many ways, at the other end of the spectrum, Switzerland may have some ideas to offer how Bali can tackle the challenges of today's agriculture amid rapid rural transformation processes that endanger one very essence of Bali, the *subak*, rice farmers and rice cultivation.

Some of the similarities of Switzerland to Bali are:

- The smallness of Switzerland with a rugged topography, small-scale agriculture, a dense population and a prosperous economy is similar to that of Bali with a likewise distinct topography which led to the type of agriculture that exists today, very densely populated; and thanks to tourism, a rapidly

28 Community mapping, as discussed in Warren (2005) which has helped communities to identify and redevelop new relationships between land and resources could be a part of the *Leitbild* formulation process.

developing economy.

- Given Switzerland's prosperous economy in a tiny country, the rural space is transforming and competed for by various entities which has led to restrictive environmental regulations. Bali's rural space is equally changing at a fast pace and stricter regulations will need to be put in place to halt uncontrolled building activities (eg continuous green belt violations, see Lorenzen, 2012).
- Switzerland has a unique cultural landscape which the government and society as a whole want to protect and are willing to put money into that protection. Bali likewise has a unique cultural landscape which it will need to better protect.
- Switzerland has developed protective agricultural policies that impose restrictions on modern large scale extensive agriculture creating incentives to protect the cultural landscape and natural resources. Bali is on the best way to develop such incentives for a better protection of its cultural landscape. Indonesia as a whole has a protective agricultural policy when it comes to rice (*swasembada beras*/ rice food security).
- In Switzerland, the introduction of direct payments led to a significant reduction of Nitrogen and Phosphorus pollution from agriculture. In Bali, signs of over-fertilisation have been investigated in several places (see for example Lansing et al., 2001; Arthawiguna, 2002).

In this paper I have discussed a variety of tools that may help to further the goal of protecting Bali's rice cultivation and with it the *subak* traditional institution. For instance, direct payments have proven to be successful in preserving the cultural landscapein Switzerland, protecting the natural resources and providing income support for farmers to do the actual care.Direct payments which have gradually replaced any other subsidies in Swiss agriculture are regarded as key element for a more globally adapted market economy, separating price from income policy (BLW, 2013b). Direct payments ensure that natural resources are preserved, that populations in rural areas are maintained, that a secure food supply is warranted and that

Figure 6 Example of how Switzerland is promoting its farmers in advertisments across the country

agricultural development is socially viable (Mann and Mack, 2004).

These are all traits that Bali's agricultural sector will need in order to survive the current rapid transformation process. A form of direct payment is what Balinese farmers would need as an incentive to continue to grow rice. So why not make payments,

that the *subak* already receive, contingent to compliance with standards that help to preserve the Balinese cultural heritage? In addition, a label of geographic origin as well as other labelling schemes could increase the marketing value of farm produce and thus likewise supplement farmers' income.

Nevertheless, compensating farmers for their services to Balinese society alone will not suffice. All layers of society will have to participate in reshaping and re-evaluating the role of agriculture beyond mere food production: Agriculture as a means to conserve the cultural landscape, and the 'unskilled' farmer becoming a knowledgeable landscape preserver and with it a valued member of society. Rethinking agriculture may also include a discussion as to what really constitutes a *subak* and what is worth and needs to be preserved thereof. As such, it remains to be seen if a re-defined *subak* can continue to function as it is today and fulfil its tasks on all levels (production, institutional, resources supply).

Using the *Leitbild* approach in an inclusive and participatory way with a range of stakeholders may help to define a common vision of the future of the *subak*, on an individual basis or in a region, and how goals can be achieved. Shaping a common vision may also pave the way for a new definition and recognition of the *subak* and its members, a vision of active and proud farmers not only in sharing water in a transparent and fair way, but also as producers of high-quality food and preservers of the cultural heritage of Bali.

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