

COUNTRY PROGRAMME LANDSCAPE STRATEGY FOR COMMUNITY

DEVELOPMENT AND KNOWLEDGE MANAGEMENT FOR THE SATOYAMA INITIATIVE (COMDEKS)

BRAZIL



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Brasília-DF, 12 december 2013.¹

Acronyms	
CAV	Centro de Agricultura Alternativa Vicente Nica [Vicente Nica Alternative Agriculture Center]
CNPJ	Cadastro Nacional de Pessoa Jurídica [National Registraton Number]
EFAV	Escola Família Agrícola de Veredinha [Veredinha Family Farming School]
IBGE	Instituto Brasileiro de Geografia e Estatística [Brazilian Statistics and Geography Bureau]
HDI	Human Development Index
HDI-M	Municipal Human Development Index
ISPN	Instituto Sociedade População e Natureza
ISSA	Instituto Sálvia de Soluções Socioambientais [Salvia Institute for Environmental Solutions]
KM	Kilometer
NGO	Non-Governmental Organization
PAA	Programa de Aquisição de Alimentos [Food Procurement Program]
GDP	Gross Domestic Product
PNAE	Programa Nacional de Alimentação Escolar [National School Nutrition Program]
UNDP	United Nations Development Program
PPP-ECOS	Programa de Pequenos Projetos Ecosociais [Small Eco-Social Projects Program] (GEF Small Grants Program in Brazil)
AFS	Agroforestry System
STR	Sindicato dos Trabalhadores Rurais [Rural Workers' Union]
ZEE	Zoneamento Ecológico-Econômico [Ecological Economic Zoning]

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Introduction

The goal of this document is to lay out the Landscape Strategy adopted as part of the process for implementing the COMDEKS/Satoyama Initiative pilot experience in Brazil. This process is currently being carried out by Instituto Sálvia – ISSA with support from Instituto Sociedade, População e Natureza – ISPN in partnership, at the local level, with Centro de Agricultura Alternativa Vicente Nica – CAV.

The Satoyama Initiative was brought to Brazil as a pilot experience within the Programa de Pequenos Projetos Ecosociais – PPP-ECOS/Global Environmental Facility – GEF, which in Brazil is coordinated by ISPN and managed by the United Nations Development Program - UNDP. Founded at the Institute for Advanced Sustainability Studies at the United Nations University in Tokyo and the Japanese Ministry of the Environment, the methodological and conceptual approach that guides this initiative seeks to promote harmonious relations between human beings and nature in order to strengthen socio-ecological resilience in multi-functional production landscapes.

Brazil is one of the countries taking part in the Community Development and Knowledge Management for the Satoyama Initiative Project (COMDEKS), together with Bhutan, Cambodia, Cameroon, Costa Rica, El Salvador, Ecuador, Ethiopia, Fiji, Ghana, India, Indonesia, Kyrgyzstan, Mongolia, Malawi, Namibia, Nepal, Niger, Slovakia and Turkey. COMDEKS is a unique global project implemented by UNDP, in partnership with the Secretariat of the Convention on Biological Diversity, the United Nations University, and the Ministry of Environment of Japan as the flagship of the International Partnership for the Satoyama Initiative. The Project is funded by the Japan Biodiversity Fund and delivered through the UNDP-implemented GEF Small Grants Programme (SGP). Currently implemented in twenty countries, the COMDEKS project seeks to enhance resilience in socio-ecological production landscapes and seascapes by developing sound biodiversity management and sustainable livelihood activities with local communities to maintain, rebuild, and revitalize socio-ecological production landscapes and seascapes.

Summary of Landscape Strategy

a landscape in the Alto Vale do Jequitinhonha (Upper Jequitinhonha Valley), part of the semi-arid region of Minas Gerais State, was selected as a priority landscape for the COMDEKS/ Satoyama Initiative activities in Brazil. This landscape is socio-environmentally vulnerable due largely to the direct and indirect impacts of vast eucalyptus plantations that occupy the upper edges of the mesas previously used by family farmers (smallholders) and to inappropriate land management practices adopted by farmers who settled the hillsides throughout the last few decades. The combination of these factors has led to the depletion of

water resources, soil degradation and loss of biodiversity in the region. Indeed, the increased socio-environmental vulnerability in this landscape has led many farmers to leave their lands in search of more dependable livelihoods on other lands or in neighboring towns.

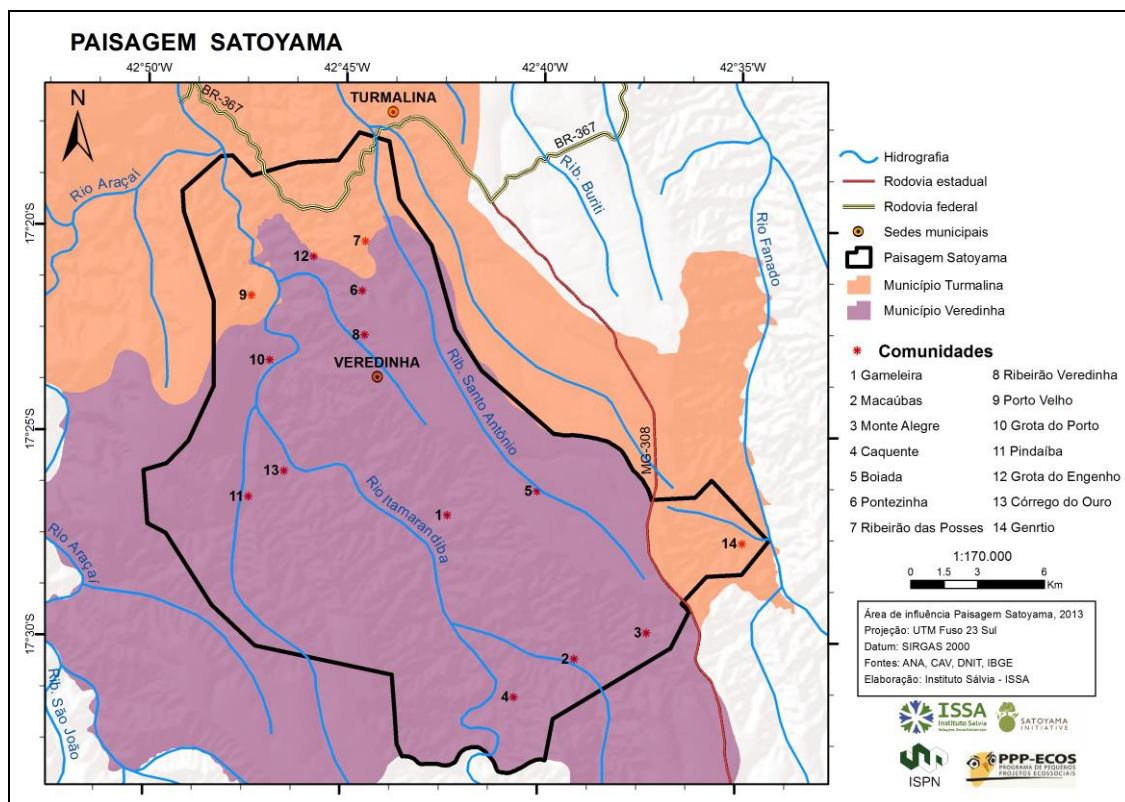
Meanwhile, some initiatives led by a local NGO and supported by international donors (including GEF/Small Grants Program) and federal government programs have reaped success in reducing these vulnerabilities, especially with regard to increasing access to water. These initiatives can stand as an example to be replicated in other landscapes facing similar vulnerabilities. This landscape was thus selected, on the one hand, in light of the degree of vulnerability faced by the communities and landscape and, on the other, by the multiplier potential of actions in the region, which have been supported by organizations with a high maturity and capillarity level that are critical to addressing these vulnerabilities.

Designed in a participatory process through a workshop held in Turmalina, the landscape strategy identified the following priority areas for actions in the region: replication and dissemination of integrated water resources management techniques (small-scale dams, containment basins, swales, cisterns, protection of springs), the adoption of sustainable land management practices, including demonstration plots with agroecological and agroforestry production systems, recovering degraded lands, and sustainable use of native Cerrado resources, (fruits, medicinal plants, honey, among other) to generate income. Moreover, the workshop participants proposed actions aimed at shared and participatory management of natural resources in the landscape through agreements supported by community organizations and councils. In order to achieve these goals, the projects supported in this landscape shall invest in sustainable production, training of communities and strengthening local organizations.

1. Priority Area: Landscape Characteristics

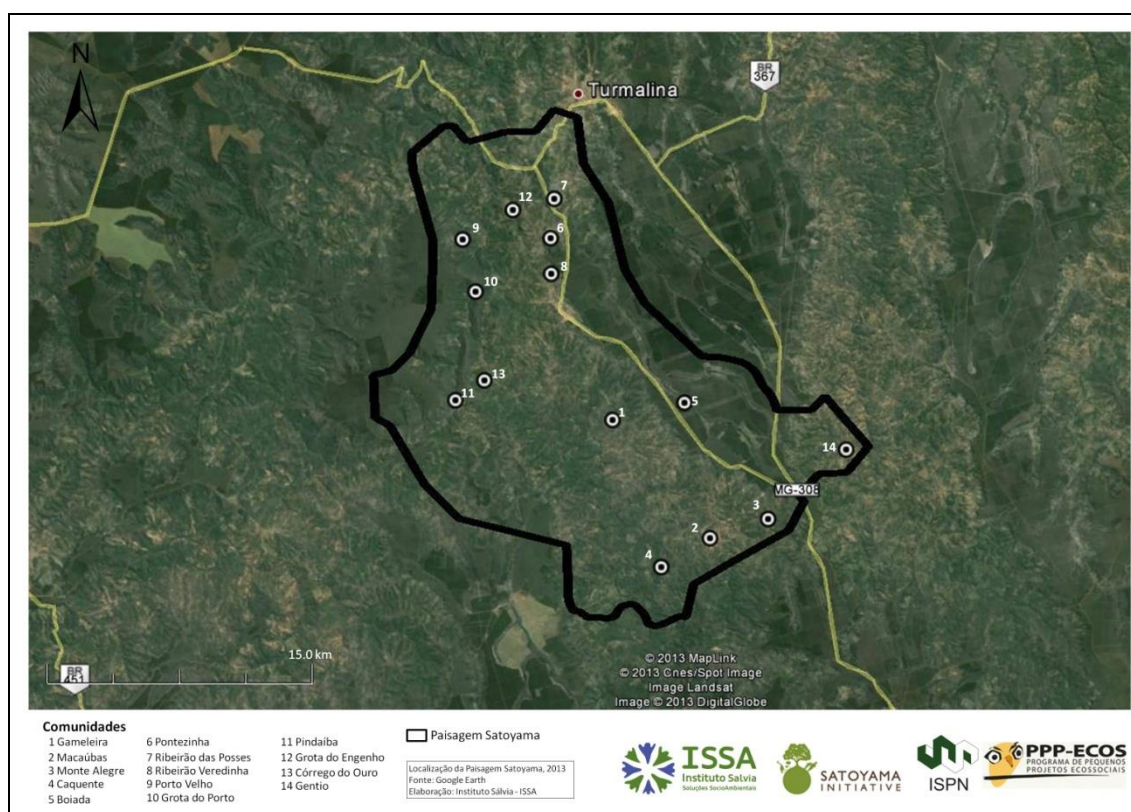
The landscape selected is a region in the Upper Jequitinhonha Valley within the semi-arid region of northern Minas Gerais which includes the municipalities of Turmalina, Veredinha, Itinga, Araçuaí, Minas Novas, and Itaobim. However, given the size of this region (referred to herein as Expanded Landscape) and availability of funding, the partners delineated a smaller priority area considered representative of the wider landscape in terms of socio-environmental vulnerability to conduct the baseline assessment and support interventions at a first stage of funding. The priority landscape covers an area of 40.596 hectares, encompassing 14 rural communities in Veredinha and Turmalina municipalities, as seen in maps 1 – 3, although only two of these communities - Ribeirão das Posses and Gentio – are located in Turmalina and the other 12 in Veredinha. Thus, the socioeconomic data analyzed focuses mainly on Veredinha, whose town is also within the landscape.

Veredinha municipality spans across 631.691km², with an estimated population of 5.743 (IBGE, 2013), and borders on the municipalities of Turmalina (15km), Capelinha (45km), Itamarandiba (128km) and Carbonita (81km) in northern



Minas Gerais state.

Map 1. Satoyama Landscape



Map 2. Satoyama Landscape and communities

The State of Minas Gerais is located in the Southeast region of Brazil, bordering the states of Bahia to the north, Espírito Santo and Rio de Janeiro to the east, São Paulo to the south and Goiás to the west. With over 853 municipalities, the state is divided into 12 meso-regions and 66 micro-regions (Map 1). These regional divisions are key for public policies, planning and decision-making on resource allocation as well as economic, social and fiscal policies. The Satoyama Landscape is part of the Jequitinhonha meso-region and Capelinha micro-region.

57% of the Minas Gerais territory is located within the Cerrado biome, 41% in the Atlantic Rainforest and 2% in the Caatinga biome. The priority landscape is fully within the Cerrado biome, however the expanded landscape includes areas transitioning to Caatinga vegetation.

The main access route to the landscape is the northern stretch of the BR 367 federal highway, which also passes through the town of Turmalina, or by state highway MG 308, on their southern and eastern stretches, both of which are paved (Map 1). From the communities, access to town (Turmalina) is only gained through hilly dirt roads, many of which are difficult to traverse during the rainy season. The distance between the town of Veredinha and the capital of Minas Gerais, Belo Horizonte, is approximately 480km.



Map 3. Veredinha Municipality within Minas Gerais State

The Upper Jequitinhonha is part of the semi-arid zone of Minas Gerais. The region faces water scarcity, prolonged droughts and low agricultural productivity. These factors, coupled with the low level of public and private investments, poor infrastructure and basic services, contribute to exacerbating poverty and rural exodus.

The municipality of Veredinha epitomizes these trends, since in a ten-year period (2000–2010) the overall population grew by only 5.5% while the rural population dropped by 16% (IBGE 2013). The Municipal Human Development Index (PNUD, 2013) trends point to slight improvements during this period, with the greatest improvement in education. However, by comparison to the HDI of Minas Gerais state as a whole, Veredinha is still well below average, especially in the income indicator.

Health services are underdeveloped and patients in serious conditions or requiring hospitalization need to be transferred to neighboring municipalities, the closest being Turmalina. The water supply and sanitation services, which are provided by the municipality, are also poor and do not cover rural communities. Only 1,366 households are supplied with water and the volume of water treated per day is 783m³ (IBGE , 2013). The majority of the population does not have sewage services and uses unlined or septic tanks and the city collects solid waste only in urban areas.

However, provision of electricity is of good quality in town, as all communities are served through the Light for All (*Luz para Todos*) Program. Communication by phone is also of worse quality functioning best in town and there are pay phones installed in each community but these often do not work. The alternative is to use mobile phones, but in some communities the signal is quite poor. In town, there is a bank branch and two service stations, as well as a lottery outlet, where once can make small payments.

The sector that contributes most to the Veredinha economy is services, followed by agriculture and public administration. The municipal GDP and per capita income underwent significant growth between 2005-2010 and the sector that most contributed to this growth was agriculture. Forestry is one of the major economic sectors in the Upper Jequitinhonha, however, most of the skilled labor in this part of the municipality comes from outside and the HDI-M confirms that only slight improvements in socioeconomic indicators were achieved due to this activity.

Overall, the town's infrastructure is poor, with some paved and other unpaved local roads. The town has paved roads but is still not fully urbanized. All access to rural communities is by unpaved roads on fragile soils, characterized by erosion and many holes in some stretches. There is no public transportation, making mobility difficult, and during the rainy season several communities are completely cut off from town. The municipality of Veredinha and surrounding areas have some civil society organizations working on projects that propose to improve the quality of life and train smallholders, most notably CAV. Of the 14 communities in the Satoyama Landscape, four have social organizations (Community Associations.) The most active NGO regionally is the Centre for Alternative Agriculture Vicente Nica – CAV. The goal of the CAV is to create alternatives that would enable families to remain in the region in order to reduce the seasonal migration of rural workers and increase their ability to coexist with the semiarid region. The CAV is the key local partner of COMDEKS activities in the region, and the target landscape was determined in consultation with its team in view of their experience managing umbrella projects and field experience in the region.

The Satoyama Landscape was defined based on some criteria designed jointly by partners, including local communities. These communities share a relationship with the cultural identity of the region, similar environmental and social characteristics and a high degree of socio-environmental vulnerability.

The landscape boundaries were adjusted according to physical boundaries of the micro-watersheds, including the headwaters of the San Antonio and Itamarandiba Rivers. Both are included in the Araçuaí River Basin, an important tributary of the Jequitinhonha River Basin (Map 1).

The landscape is bordered by a plateau with altitudes ranging from 800 to 900m, where eucalyptus is planted extensively and its central area is comprised of hills

ranging from 600 and 800m. This topography makes for a scenic landscape with a broad view of the small valleys and gullies.

2. Situation Analysis

2.1. Methodology used

In order to assess the situation in the target landscape, the ISSA team conducted a socio-environmental baseline assessment with four main components: 1) desk study and analysis of documents and studies on the region, including previous project appraisals conducted with ISPN support; 2) compilation of statistical and spatial secondary data with regard to socioeconomic and environmental factors at the municipal level, including generation of maps (hydrology, soils, topography and land-use classification) at the landscape level (Annex 1). The main sources of statistical data were IBGE and the Minas Gerais State Government and the land use classification was conducted using 30m resolution Landsat images (11/2011); 3) field survey through 12 communities conducted by ISSA team, Renato Araújo from ISPN and José Murilo from CAV, which focused on biophysical aspects: soil conservation, vegetation, water resources and land use patterns. These field observations were also aimed at verifying and fine-tuning the spatial analysis (land use classification) on the ground. 4) 2-day participatory Satoyama Workshop: *Socio-environmental actions in the Upper Jequitinhonha*, where representatives from 11 communities within the landscape and other stakeholders scored 25 indicators through facilitated focus group discussions, where they also provided qualitative data and analyses of indicators (see Annex 3: workshop report). The participants also set priorities for interventions based on the following key socio-environmental vulnerabilities: water scarcity, soil degradation, climate conditions and changes, low productivity, rural exodus - particularly of youth, poor infrastructure (mainly roads) and weak social/political assets). Designed initially in the groups as strategies for overcoming these vulnerabilities, the priorities were then joined, complemented and agreed on collectively by the wider workshop plenary.

In preparation for this workshop, the twenty indicators developed through the Satoyama Initiative were adapted by ISSA in consultation with partners, tailoring them to the cultural and biophysical reality of this landscape. Three new indicators were created due to their relevance as vulnerabilities in this landscape: a) access to water; b) quality of soils/adoption of agroecological production systems; and c) social/political resources. 2.2. Results of the Socio-environmental Baseline Assessment

2.2.1. Ecological Economic Zoning Data

80% of the Satoyama Landscape is located within Ecological Economic Zone 6, an area characterized by low social indicators and a high degree of vulnerability to natural factors, and as a result, the area is highly dependent on direct and constant assistance from state or federal government agencies. The results of the Satoyama Landscape Baseline Assessment are summarized below.

1) "Social potential" is comprised of the production, natural, human, and institutional potential as a basis for municipalities or micro-regions to achieve sustainable development. The social potential in this landscape was ranked as 84% "very poor" and 16,4% "unfavorable." 2) "Natural vulnerability" refers to environmental contamination by land use. 65.35 % of the area in the landscape is classified as medium, 18.68% low and 15.97% high. The "vulnerability of water resources", which measures the natural availability of water and the potential for contamination of aquifers, is rated as 92.77% "high" and 7.23% "very high" vulnerability.

3) The indicator "priority for recovery" pinpoints priority areas for restoration and conservation-oriented management and enforcement, targeting recovery, conservation and/or development efforts according to the needs of each area. In this landscape, 48.78% respondents considered this a "very high" priority, 17.77% selected "high" priority, and 19.97% responded that it was a "low" priority.

4) The "environmental quality" indicator assesses the status of natural resources vis-à-vis living conditions that these resources provide, which in this landscape was ranked 62.06% "low", 35.95% "medium" and 1.95% "high". The "degree of conservation of native vegetation" indicates the degree of fragmentation of natural vegetation. The score for this landscape suggests that native vegetation conservation is 46.64% "very low", 16.74% "very high", 13.81% "low", 12.92 % "medium" and 9.89% "high."

5) For "water quality", the assessment considered only point-source pollution of surface waters stemming from wastewater. The rating for the quality of water in the landscape was 98.47% "medium" and 1.39% "low."

2.2.2. Socio-environmental Assessment (Baseline Assessment): field visits and *Satoyama Workshop: Socio-Environmental Actions in the Upper Jequitinhonha*

According to the assessment conducted by the ISSA team (Annex 1) and participatory consultations with local stakeholders in the workshop (Annex 2) , the main vulnerabilities found in this landscape are:

- Poor access to water in sufficient quantity and quality to meet the domestic and productive needs of the communities, mainly due to extensive production of eucalyptus in the headwaters of springs and inadequate livestock management. This water scarcity, which is also related to climatic factors, is undoubtedly the greatest vulnerability in the landscape, also undermining food security and fueling rural exodus in the region.
- Soil degradation due to inappropriate management techniques, particularly cattle grazing, as the stocking rate often exceeds the carrying capacity of pastures and renovation of pastures is not performed properly. This degradation is also due historically to the removal of

vegetation for coal, although this activity has declined substantially over the past few years.

- Eucalyptus monocultures - Installed in the 1970s in high plateau areas and extending to the edges of mesas, this activity has caused serious environmental and socioeconomic impacts in the region, reducing water availability and undermining the livelihoods of family farmers. In locations where the eucalyptus is occupying the plateau edges, a decrease in streams flows has been observed as family farmers and their cattle were also pushed down and "trapped" in the gullies and slopes. Grazing in low areas increased trampling on springs and felling of trees for firewood and charcoal contributed to drying up water sources.
- The exodus of rural youth due to lack of income generation opportunities and leisure in rural areas. From the perspective of the young people consulted in this assessment, the departure of the younger generation stems largely from the two first vulnerabilities above (water scarcity and soil degradation);
- Loss of biodiversity due to suppression of native vegetation for Eucalyptus monocultures, logging for charcoal, intensification of livestock and agricultural activities;
- Rural exodus due to low productivity and lack of water. Some communities face serious water shortage problems, depend on piped water from neighboring communities to farm or have no other recourse, thus many are leaving their communities. In some communities, farmers have moved to town and only go to their farms on weekends. Another more recent development is the subdivision of farms for building weekend houses or condominiums.
- Use of chemical fertilizers and pesticides, which occurs in all communities, according to observations from farmers consulted, is increasing the amount of certain pests that previously did not occur in the region and contaminating water sources.
- Low degree of social organization among farmers, since their associations generally lack the technical, administrative and financial capacity to defend the interests and rights of farmers vis-à-vis public agencies and policymakers.- Cultural degradation due to a lack of interest among young people in participating in local activities such as traditional festivals, dances and regional cuisine. The only such events currently taking place in the communities are weddings or birthdays and traditional religious festivals are held in town. The community of Monte Alegre is the only one in the landscape that produces handicrafts, mostly ceramics with flower designs using natural materials extracted in the region. Other communities have embroiderers, whose products are sold

at fairs and in the towns Veredinha and Turmalina, albeit still in a disorganized fashion.

2.2.3. Analysis of Satoyama Resilience Indicators

These findings are confirmed by the general analysis of the indicators scored in the Satoyama Workshop. This scoring was done in 3 focus groups composed of representatives from 3-4 communities per group, including men, women and youth, who attributed scores and provided qualitative data on the indicators regarding their community (see Annex 2). In this section, we analyze the four main groups of indicators in terms of their scores on a scale of 1 to 5 and then in terms of the trends and changes that these indicators underwent over the last forty years.

The indicator groups with lowest average score were in group 2 - Agricultural diversity (2.5), group 1 - Protection of nature (2.65) and group 4 - Equity, gender equality and social justice (2.72), whereas the indicators for group 3 - knowledge, learning and innovation, received the highest average score (3.9).

In group 1 - Protection of nature - there are significant differences among the scores, demonstrating the heterogeneity of local land use characteristics and stakeholder perceptions from different communities with respect to the indicators in this group. In general, however, the average score of this group of indicators was quite low (2.61) and the lowest average score was given to the third indicator, “ecological connections between components” (2.18), followed by “areas protected for their ecological and cultural importance” (2.36), “coping with stresses and shocks and related changes in environment and climate” (2.45) and lastly, “access to water” (2.63). It is significant that first indicator, “*diversity in the landscape*” got a higher average score as the landscape is comprised of a wide diversity of parts when one accounts for the various production systems, including vegetable gardens, orchards, and pastures. .

Indicators in –the second group, “agricultural diversity” had the lowest overall average across the four groups. The indicator with the lowest score (1) was “documenting and recording knowledge about varieties of plants and animals used in communities” which shows the need to develop activities aimed at addressing this. Additionally, the low average score of indicator 9, “soil quality/ecological production” (2.27) confirmed the field visit assessment that identified degraded soils as one of the major vulnerabilities. Indeed, it is extremely relevant that the three communities that gave scores of 1 for this indicator (Porto Velho, Grota Ribeirão, and Veredinha), as well as the communities that gave a score of 2 (Monte Alegre, Pindaíba and Pontezinha), are located near the eucalyptus plantations. The eighth indicator, “availability and variety of foodstuffs/food security” got a very high score (3.81) with no significant geographic variation.

–In the third group, “Knowledge, Learning, and Innovation”, the indicators related to the time people have been using the land (15) and systems promoting

exchanges and market access systems (11, 12), received the highest scores. The trend of increased market accessibility can be attributed to the increased marketing of products at fairs, through various programs, and the role of CAV in project execution and coordination between communities. Moreover, some farmers reported that these efforts by CAV have increased their level of awareness regarding the need to improve their management practices through innovative technologies and care for nature.

Indicator 14, “cultural traditions practiced in the community” was considered to be undergoing a negative trend, with high rates of respondents identifying the indicator as “much worse” and “slightly worse. Indicator 15, “time that the community interacts with the landscape” also revealed a negative trend likely due to the widespread departure of younger residents to urban centers.

In group 4, “Equity, Gender Equality and Social Justice” indicator 17, “recognition of the importance of women’s knowledge of biodiversity” and 20, “*gender issues*” received the highest scores (3.81 and 3.54, respectively). These results suggest that women play an important role in the community and in land use activities, as confirmed by the testimonies in the groups. The lowest scoring indicators in this group are related to health risks (1.54) and social infrastructure (2.18). The qualitative data collected in the workshop corroborates this finding since contamination of water resulting from chemical inputs to agriculture and livestock and the lack of adequate sewage systems were considered major threats to the health of communities. Similarly, the poor quality of social infrastructure was confirmed by field visits and analysis of secondary data.

In general, the responses were varied across communities, suggesting significant differences in perception about the reality within the target landscape, as well as actual differences between communities in the same landscape as a function of several factors. This includes location within the watershed, and subsequently water availability and degree of soil degradation, as well as effects of initiatives supported by CAV that have implemented water management technologies, production systems and market access. Indeed, we observed that some of the communities receiving constant support from projects over the past few years, such as Gameleira, reported a significant improvement in most indicators.

The results of the assessment suggest an increased awareness among farmers about the need to adopt sustainable land use practices which can be attributed largely to the work CAV has been doing in the region. However, as reported by local stakeholders in the workshop, this awareness has not been sufficiently translated into practical changes in the way people use the land.

Thus, it is necessary to implement demonstrations allowing farmers to observe the practical techniques that are most effective and will incentivize them to move towards more sustainable production systems. The analysis confirms the need to invest in training and qualified technical assistance to support the transition process.

2.2.4 Land use Assessment

The high degree of socio-environmental vulnerability found in the workshop and field visits was corroborated by the land use analysis presented in detail in Annex 1. The spatial classification of different types of land use conducted by ISSA shows that there are two main situations in the priority landscape: the highlands, with altitudes ranging from 800 to 900m, where the eucalyptus plantations are concentrated, and the central area, with hills between 600 and 800m in elevation, where most of the communities are located.

The findings of this analysis indicated four main classes of land use in the landscape: 1) Agriculture, with an area of 4483.07 ha (11.04 %), mostly occupied by farming and natural and planted pastures, 2) Eucalyptus monoculture, with 1499.63 ha (3.69%), 3) degraded areas, with 11240.49 ha (27.69%), consisting of exposed and eroded soils, and 4) Remnant and/or recovering vegetation, with 20298.30 ha (50%), comprised of steep plateau edges, hillsides, gullies, gallery forests and disturbed areas that are in the process of recovering but still considered degraded vegetation. The remaining 3073.43 ha (7.57%) consist of unidentified uses.

This analysis was done in 30m resolution images, and thus required ground truthing to distinguish what is remnant vegetation, to what extent it is undergoing recovery/degradation at different points in the landscape. The field visits revealed, however, that much of the vegetation classified as area in recovery is actually still quite degraded due to the impact of the anthropogenic factors mentioned above (eucalyptus, fire, overgrazing, logging).

3. Landscape Strategy (Expected results and impact indicators)

The main outcomes desired as a result of actions to be supported in this landscape, as well as indicators to monitor these impacts, are summarized in Table 1. Many of the indicators were drawn from the Satoyama resilience indicators although additional indicators used at the landscape and/or project level were also included. It is important to underscore that such indicators are aligned with the indicators defined in ProDoc for the current operational phase of PPP - ECOS 5 (FSP).

These outcomes were drawn from the priority areas of action discussed in the plenary session of the Satoyama Workshop. (Annex 3). Similarly, the activities proposed in Table 1 were based on the proposals from the working groups to overcome the vulnerabilities in practice. The numbered indicators (dubbed Satoyama Indicators) refer to the socio-ecological resilience indicators proposed by the Satoyama Initiative methodology, which were adapted for the baseline socio-environmental assessment. These indicators shall be measured by using the same methodology adopted for scoring in the Satoyama Workshop (Annex3). Although these aggregated indicators pertain to the landscape as a whole, some may be used to monitor changes at the level of projects and communities to be supported through this initiative.

Table 1: Outcomes, activities and indicators

Outcomes	Activities	Indicators
1. Increase in the quantity and quality of water available to farmers in the priority landscape as a whole through the adoption of integrated water resource management systems	1.1 Construction and maintenance of small scale reservoirs, containment basins, swales, cisterns, and spring protection. 1.2 Implementation of on-site wastewater treatment and re-use systems 1.3 Reforestation around springs and water courses 1.4 Monitoring and evaluation of quantity and quality of water available to farmers	- Flow and quality of water in springs and storage systems (small-scale reservoirs and cisterns) - <i>Satoyama Indicators 4 and 5:</i> 4. Capacity to cope with stresses and shocks related to changes in the environment and climate 5. Number of families with access to water
2. Adoption of sustainable farming and land management techniques, that enable improvements in soils, recovery of degraded areas, and conservation of native vegetation connecting farming systems	2.1 Implementation of demonstration plots with agroecological and agroforestry farming systems 2.2 Support for extractivism, use and processing of products made from Cerrado plants 2.3 Setting up bee-keeping (honey and native/stingless bees) 2.4 Setting up demonstration plots with ecological/sustainable cattle grazing practices 2.5 Monitoring and technical support for demonstration plots (field visits) 2.6 Farmer-to-farmer exchanges of experience and visits 2.7 Collective/community labor in planting and land management practices (<i>Mutirões</i>)	- Number of farmers adopting sustainable production systems on their property - Area (ha or % of property) managed through sustainable production systems - <i>Satoyama Indicators: 3, 4, 8, 9:</i> 3. Ecological linkages between components in the landscape for sustainable production 4. Coping with stresses and shocks related to environmental and climate changes 8. Availability and variety of foodstuffs in the communities /food security 9. Quality of soils/agroecological production
3. Improved livelihoods through increased income, food security and market access, thus increasing the number of young people staying in rural areas	3.1 Support for marketing of products mentioned in Outcomes 1 and 2, including organization of production, labeling, brand development, business plans, market studies; 3.2 Construction, maintenance and/or improvement of	- Number of farmers selling their products in local markets - Increase in household income as a result of these activities - <i>Satoyama Indicators 8, 11, 12:</i> 8. Availability and variety of foodstuffs/food security 11. Exchange of agricultural

	<p>small-scale agro-industrial processing facilities using Cerrado resources and other products such as tropical fruits from homegardens;</p> <p>3.3 Production and cultural activities geared towards youth and other members of the community, including collective labor farming activities, festivals</p>	<p>biodiversity</p> <p>12. Market access</p>
<p>4. Strengthening of community organizations and other collective forums such as committees and councils for participatory natural resource management through agreements (formal and informal) on land use at the community and landscape level</p>	<p>4.1 Training courses and capacity building workshops in administrative and financial management, project cycle management, aimed at local leaders and technicians working with associations</p> <p>4.2 Meetings and workshops of groups, community organizations and councils aimed at establishing land use and participatory natural resource management agreements</p> <p>4.3 Meetings with policymakers and other government authorities</p>	<p>- Existence of natural resource management agreements (formal or informal)</p> <p>- <i>Satoyama Indicators 18, 19:</i></p> <p>18. Natural Resource Management</p> <p>19. Social/political assets</p>
<p>Knowledge management</p>	<p>5.1 Documenting and recording traditional knowledge about natural resources and agricultural varieties</p> <p>5.2 Recording experiences implemented by projects</p> <p>5.3 Dissemination of best practices, including production of educational materials (pamphlets, videos, manuals, publications, and media)</p> <p>5.4 Exchange of experience and peer-to-peer training through field visits</p>	<p>- Number of dissemination and education materials (records, pamphlets, manuals, videos, etc.)</p> <p>- <i>Satoyama Indicators 6 e 7:</i></p> <p>- 6. Plant and animal varieties used by communities</p> <p>- 7.Documentation/maintenance of knowledge on plant and animal varieties</p>

3. Priority themes and selection criteria

4.1. Priority themes

As discussed in the Satoyama Workshop plenary session on priorities for actions in the Landscape, the projects to be supported must fall under at least one of the five main lines of action (Outcomes in Table 1).

Some themes that should cut across these outcomes are: food security and sovereignty, influencing public policies, gender and sustainable environmental management. Moreover, the projects should be based on strategies and activities that: can be replicated in the Landscape as a whole; propose coupling production and income generation with conservation and sustainable use of Cerrado natural resources; and propose integrated solutions for tackling more than one vulnerability listed in section 2.2.2 above.

4.2. Project selection criteria

Generally speaking, the procedures for approving projects will abide by the norms adopted by PPP-ECOS in accordance with the SGP program (SOP manual). However, due to the territorial nature of the Satoyama Initiative, such procedures shall be simplified and the specific themes shall be based on the priorities identified in the Socio-Environmental Assessment. The project proponents must be non-governmental organizations working in the Landscape or surrounding areas that comprise the Expanded Landscape. These institutions must have a National Registration Number – CNPJ and bank account to receive funds. If these organizations do not have the capacity to manage project funds, other non-governmental organizations may do so on their behalf or support them in performing this duty.

In addition to the general PPP-ECOS guidelines, the projects should be implemented in the Priority Landscape or, alternatively, in the Expanded Landscape, i.e. in surrounding areas that share the same problems and vulnerabilities. The actions proposed in the projects must be aimed at improving landscape functions, including conservation and recovery of soils, rainwater infiltration and groundwater recharge, incorporating trees into agricultural systems, diversification of components (production systems) in the landscape, conservation and increase of stretches of vegetation between farming systems and management and conservation of genetic resources and agricultural diversity (heirloom and local varieties, medicinal plants, etc.).

Some examples of activities that can be supported include: construction and maintenance of integrated water resource management systems (small-scale reservoirs, containment basins, cisterns, spring protection/fencing), agroecological production, planting and maintenance of agroforestry and silvopastoral systems, recovering degraded lands using soil conservation techniques, reforestation of permanent preservation and legal reserve areas

(protected areas), harvesting, processing, and marketing of products of biodiversity (Cerrado plants, pulps, fibers, handicrafts, etc.), beekeeping of honey (*Apis*) and native stingless bees (*Meliponinae*), medicinal plants, among others. Furthermore, projects can provide training and exchanges in these areas and in gender and youth issues as well as in culturally-oriented activities linked to natural resource use and management. Projects may also support efforts aimed at participatory management of natural resources by strengthening community-based organizations and forums working on establishing agreements and pacts on natural resource use and management in the landscape, such as committees, councils, and forums.

As per discussions with local partners in Turmalina (CAV and community representatives), ISSA, and ISPN, the strategy for distributing Satoyama Initiative funds should take into account both geographic regions and community distribution within the landscape and the five main outcomes described above so as to ensure that the main priorities - and therefore vulnerabilities - are addressed and that the project impacts span across the landscape. The other element of this strategy is to fund an umbrella project that would enable engagement and exchange among the communities as well as administrative coordination. Besides ensuring overall managerial and administrative support, this project will allow networking and complementarity among the other projects, in addition to knowledge management. This umbrella project could potentially be supported by a PPP - ECOS strategic project with GEF funds.

5 . Monitoring and Evaluation Plan

The monitoring and evaluation of this strategy will be conducted, first, by scoring the indicators in Table 1 in workshops upon project completion. These workshops will adopt a participatory methodology similar to the one applied in the Satoyama Workshop (see Annex 2: Workshop Report for more details on this process). Thus, it is recommended that the scoring exercise be comprised of the same communities and preferably of the same representatives as in the first Satoyama Workshop. If, however, the same people are unable to attend, then the facilitators should once again discuss and clarify the basic concepts underlying each indicator before they are scored again.

The monitoring and evaluation activities at the landscape level should be provided for in these projects' budgets and/or in the umbrella project and should complement the monitoring of activities at the project level, which might have their own indicators pertaining to activities and outputs in addition to the wider outcome-level indicators. Thus, these outcome indicators will seek to measure impacts more broadly on the landscape as a whole, while the project-level indicators will focus in on monitoring of the direct results of project activities.

In order to assess progress at the landscape level, the indicator scores will be compared with the scores given at the 1st Satoyama Workshop. In addition to these quantitative data, the qualitative/explanatory data will be analyzed based

on the perceptions of local stakeholders regarding changes achieved in their communities and at the landscape level. This analysis will also help to steer current projects and design new projects for the landscape based on the guiding principles of environmental vulnerability and resilience.

Moreover, technical field visits will aid through the umbrella project and individual projects will aid in on-site monitoring and technical assistance, proposing adjustments/management practices in demonstration sites and recording results.

6 . Knowledge Management Plan

The best practices identified in the various project activities will be recorded in these visits and through the information gathered at the monitoring and evaluation workshops described above. During the field visits, technicians will take photographs and conduct semi-structured interviews with farmers about project activities to collect inputs for case studies.

The lessons learned in these monitoring activities will be systematized, with support from the umbrella project, summarized in documents and other media such as videos, if possible, then disseminated among farmers and policymakers, especially at the local (municipalities, associations, unions, companies producing eucalyptus) and state level (Minas Gerais state government, universities), but also in national forums with support from ISPN.

Additionally, the Satoyama Initiative experience will be systematized by ISPN as part of the analysis of projects supported by PPP - ECOS. The projects supported within the landscape may also take part in exchanges with other PPP-ECOS (SGP) projects, training courses, workshops, and thematic seminars, as well as in the PPP-ECOS community-to-community (peer-to-peer) advisory program.

References

MICCOLIS, A. *Relatório de Avaliação. Projeto “Água e Sistemas Agroflorestais: Desenvolvimento Local Sustentável no Alto Jequitinhonha”* [Report on Appraisal of Project: Water and Agroforestry Systems: Sustainable Local Development in the Upper Jequitinhonha] (BRA/05/10). Brasília-DF, 25 April 2012.

Internet sources:

GUIA 4 RODAS. <http://viajeaqui.abril.com.br/guia4rodas>. Last consulted on 10 December 2013.

IBGE. **Censo Demográfico 2010**. [Demographic Census 2010] Instituto Brasileiro de Geografia e Estatística. Rio de Janeiro, documento baixado no sítio <http://www.ibge.gov.br/home>, last consulted on 10 December 2013.

IBGE. **Consulta sobre território** [Territory data], em <http://www.ibge.gov.br/home/geociencias/areaterritorial/principal.shtm>) e ftp://geoftp.ibge.gov.br/organizacao_territorial/divisao_territorial/2013/), last consulted on 10 December 2013.

IBGE. <http://cidades.ibge.gov.br/xtras/home.php>, **Cidades @**, Instituto Brasileiro de Geografia e Estatística, last consulted on 10 December 2013.

IBGE. <http://www.sidra.ibge.gov.br/>, sources in IBGE **Sidra System**: Pesquisa Industrial Anual – Empresa, Produção Agrícola Municipal, Pesquisa Pecuária Municipal. Instituto Brasileiro de Geografia e Estatística –IBGE, last consulted on 10 December 2013.

MCIDADES. **Diagnóstico dos Serviços de Água e Esgotos – 2010** [Assessment of Water and Sewage Services]. Sistema Nacional de Informações Sobre Saneamento – SNIS. Ministério das Cidades. Brasília, in <http://www.snis.gov.br/PaginaCarrega.php?EWRErterterTERTer=85>, last consulted on 10 December 2013.

MINAS GERAIS, 2013. **Zoneamento Ecológico-Econômico** [Ecological Economic Zoning]. <http://www.zee.mg.gov.br/>, last consulted on 10 December 2013.

MINAS GERAIS. **Portal do Governo do Estado de Minas Gerais, [Minas Gerais State Government Portal]** <http://www.mg.gov.br/governomg/portal/m/governomg/governo/5799-estrutura-governamental/5794/5040>, last consulted on 10 December 2013.

MINAS GERAIS. **Secretaria de Estado de Planejamento e Gestão de Minas Gerais**, <http://www.planejamento.mg.gov.br>, last consulted on 10 December 2013.

PNUD. **Atlas do Desenvolvimento Humano no Brasil**. documento baixado em <http://www.atlasbrasil.org.br/2013/>, last consulted on 10 December 2013.

PREFEITURA MUNICIPAL DE VEREDINHA - <http://www.veredinha.mg.gov.br/>, last consulted on 10 December 2013.