Satoyama Agricultural Development Tool

The purpose of this tool is to provide a mechanism to evaluate a given community on the basis of the 5 principles of Satoyama. Satoyama is a Japanese term for landscapes that comprise a mosaic of different ecosystem types which include secondary forests, agricultural lands, irrigation ponds, grasslands and human settlements. These were formed and developed through prolonged interaction between humans and ecosystems. Because of its strong link to Agriculture, this tool seeks to use the Satoyama principles to improve indigenous and rural communities on the basis of sustainable agricultural practices that provides a balance with the natural ecosystem and promotes the preservation of local culture and traditions.

It begins with a general information section that records essential basic data. Each of the principles are then found on separate subsequent sheets and has questions to be answered. Data can be obtained from whatever local source that is available to the person using the tool and the methods employed to determine the answers may differ from person to person. What is important is that the person using the tool feels that the answer to the question is justified based on the data that is available to him/her. The tool is flexible in that the user can add additional questions and remove those that do not apply.

The questions are answered qualitatively on the basis of a Likert scale from 1 to 5 with 1 being the lowest and 5 being the highest. At the bottom of the table, the percentage is determined from the highest possible total.

After all the questions for each of the 5 principles are answered, the next sheet is the characterization of the community into the 3 possible categories. Please follow the guidance.

A description of each category is then given on the basis of ecosystem services and human well-being. Recommendations for the way forward are given and are premised on the 5 principles of Satoyama.

Feel free to distribute this tool to your colleagues and I would appreciate any feedback you may have in relation to this tool. I could be contacted at devdub@yahoo.com

Satoyama **Agricultural Development Index Questionnaire**

General

1. Village Name:_____
2. Province:_____
3. District:_____
4. Country:_____
5. Village Size:_____ hectares

Village Leader Data:

6. Name:_____
7. Age:_____
8. Position:_____
9. How long has the leader been serving this village?_____ years
10. How is the village head selected?

    □ Hereditary □ Elections

    □ Appointment □ Other_____

Demography

11. Population:_____
12. Male-female ratio:_____
13. Number of households:_____
14. Average family size:_____

Ethnicity

15. What ethnic groups make up the village? _____

    _____

    _____

    _____
16. What is the ethnic group of the original village? _____
17. Are there outsiders in the village? □ Yes □ No
18. Apart from national language, what other local languages are spoken?

_____

_____

Cyclic Use of Natural Resources		
Questions	**Answers**	**Total Possible Points**
Is there diversity in land use? (Grassland, forest, cropland, irrigation ponds, human settlements, etc)		5
Is there evidence of good nitrogen fixation?		5
Is there an absence of soil erosion?		5
Is there an absence of soil degradation?		5
Has the number of keystone species been maintained?		5
Are other types of farming practiced instead of mono-cropping?		5
Are pesticides use avoided or minimized?		5
Are biopesticides and biological pest control being used?		5
Is there an absence of fish kills or algae bloom?		5
Total		45
Percentage		

1. In the answers column please put the number that corresponds to your answer based on the scale from 1 -5.
2. In the total box please add the numbers of all the answers above.
3. In the percentage box please calculate the percentage of the total answers from the possible points:
(Total answers ÷ Total Possible Points) x 100

Scale	
Strongly Agree	5
Agree	4
Neither Agree nor Disagree	3
Disagree	2
Strongly Disagree	1

Resource Use based on Carrying Capacity and Resilience of Environment		
Questions	**Answers**	**Total Possible Points**
Is the land size of the village yet to be legally demarcated?		5
Is there inadequate water supply for the residents?		5
Is there inadequate forest conservation and protection?		5
Is there evidence of tree species reduction?		5
Is there evidence of water pollution?		5
Is there evidence of air pollution?		5
Is there evidence of soil pollution?		5
Is there inadequate waste management in the village?		5
Is there an inadequate disaster preparedness plan in the village?		5
Is there evidence of overfishing?		5
Is there evidence of overhunting?		5
Is there evidence of overgrazing?		5
Total		60
Percentage		

1. In the answers column please put the number that corresponds to your answer based on the scale from 1 -5.
2. In the total box please add the numbers of all the answers above.
3. In the percentage box please calculate the percentage of the total answers from the possible points:
(Total answers ÷ Total Possible Points) x 100

Scale	
Strongly Agree	1
Agree	2
Neither Agree nor Disagree	3
Disagree	4
Strongly Disagree	5

Recognition of the Importance and Value of Local Cultures and Traditions		
Questions	**Answers**	**Total Possible Points**
Are there cultural landscapes and/or archeological sites that are recognized in the village?		5
Are there unique art, craft and/or objects that are recognized in the village?		5
Are there cuisines that are typical and/or unique to the village?		5
Are there rituals/ceremonies that are typical and/or unique to the village?		5
Is there a local language preserved by the village?		5
Are there local skills and knowledge that are typical and/or unique to the village?		5
Are eco-tourism, agro-tourism and/or homestays promoted in the village?		5
Total		35
Percentage		

1. In the answers column please put the number that corresponds to your answer based on the scale from 1 -5.
2. In the total box please add the numbers of all the answers above.
3. In the percentage box please calculate the percentage of the total answers from the possible points:
(Total answers ÷ Total Possible Points) x 100

Scale	
Strongly Agree	5
Agree	4
Neither Agree nor Disagree	3
Disagree	2
Strongly Disagree	1

Collaborative Management of Natural Resources		
Questions	**Answers**	**Total Possible Points**
Is the organizational structure of the community well defined with clear roles for all players?		5
Is there diversity and inclusivity in the decision making process?		5
Is there transparency in the decision making process?		5
In the event of conflict is there a good negotiation and mediation mechanism?		5
Is there good communication and dialogue among citizens?		5
Total		25
Percentage		

1. In the answers column please put the number that corresponds to your answer based on the scale from 1 -5.
2. In the total box please add the numbers of all the answers above.
3. In the percentage box please calculate the percentage of the total answers from the possible points: (Total answers ÷ Total Possible Points) x 100

Scale	
Strongly Agree	5
Agree	4
Neither Agree nor Disagree	3
Disagree	2
Strongly Disagree	1

Contribution to Local Socio-Economies		
Questions	**Answers**	**Total Possible Points**
Is the infant mortality rate less than 5 per 1000 births?		5
Is the life expectancy at birth more than 80 years?		5
Is the literacy rate in the community between 95 and 100%?		5
Is the crime rate less than 10 per 1000 persons in the community?		5
Is there a low incidence of alcoholism/drug addiction in the community?		5
Is most of the food consumed produced within the community?		5
Are most members of the community employed within the village?		5
Total		35
Percentage		

1. In the answers column please put the number that corresponds to your answer based on the scale from 1 -5.
2. In the total box please add the numbers of all the answers above.
3. In the percentage box please calculate the percentage of the total answers from the possible points: (Total answers ÷ Total Possible Points) x 100

Scale	
Strongly Agree	5
Agree	4
Neither Agree nor Disagree	3
Disagree	2
Strongly Disagree	1

Characterization of Community

Principles	Percentage of Answers	Rating	Satoyama Points
Cyclic Use of Natural Resources			
Resource Use based on Carrying Capacity and Resilience of Environment			
Recognition of the Importance and Value of Local Cultures and Traditions			
Collaborative Management of Natural Resources			
Contribution to Local Socio-Economies			
General Satoyama Points			

1. Insert the percentage of answers obtained for each principle into the corresponding box.
2. Based on the key, choose the correct option in relation to the percentage of answers obtained and write it in the corresponding box in the rating column.
3. By dividing the percentage obtained by 100, the points are obtained and written in the corresponding box in the points column.
4. In the General Satoyama Points box please place the average of the points obtained for the 5 principles.
5. The final characterization is based on the General Satoyama points obtained and the range in which it falls as shown in the categories guide.

Key	Categories
High (80-100%)	Satoyama Like (0.8-1)
Medium (60-79%)	In Transition (0.6-0.79)
Low (0-59%)	Non Compliant (0-0.59)

Definition of Categories

Ecosystem Services	Indicators	Categories		
		Non Compliant	**In Transition**	***Satoyama* Like**
Provisioning	Crop yields	Low	Average	High
	Production yields (milk, meat, eggs, etc.)	Low	Average	High
	Marine catches	Low	Average	High
	Forestry production index	Low	Average	High
	Wildlife	Low	Average	High
	Grazing pasture	Inadequate	Average	Adequate
	Edible plants gathered	Low	Average	High
Regulating	Air quality	Low	Average	High
	Water quality	Low	Average	High
	Flood control	Low	Average	High
	Soil erosion	High	Average	Low
	Soil degradation	High	Average	Low
	Maintenance of keystone species	Low	Average	High
	Pest control	Low	Average	High
	Chemical fertilizer use	High	Average	Low
	Pesticide use	High	Average	Low
	Land use variation	Low	Average	High
	Soil contamination	High	Average	Low
	Waste management	Inadequate	Average	Adequate
	Incidence of abandoned agricultural land	High	Average	Low
	Incidence of disease	High	Average	Low
Cultural	Numbers of sacred groves and establishments	Low	Average	High
	Numbers and types of festivals, rituals and/or ceremonies	Low	Average	High
	Numbers of important landscapes and/or archeological sites	Low	Average	High
	Levels of environmental education	Low	Average	High
	Levels of green tourism	Low	Average	High
	Numbers of recognized local art, craft,	Low	Average	High

	objects, foods, etc.			
	Production levels of recognized local art, craft, objects, foods, etc.	Low	Average	High
	Number of sacred plants	Low	Average	High
Supporting	Land cover	Low	Average	High
	Vegetation cover	Low	Average	High
	Primary production	Low	Average	High
	Eutrophication	High	Average	Low
	Incidences of modification to natural waterways	High	Average	Low
Human Well-being				
Security	Personal safety	Low	Average	High
	Resource access	Low	Average	High
	Security from disasters	Low	Average	High
Basic Materials	Livelihoods	Insufficient	Average	Sufficient
	Nutritious food	Inadequate	Average	Adequate
	Shelter	Inadequate	Average	Adequate
	Access to goods	Inadequate	Average	Adequate
Health	Physical strength	Low	Average	High
	Feeling well	Low	Average	High
	Access to clean air	Inadequate	Average	Adequate
	Access to clean water	Inadequate	Average	Adequate
Social Relations	Social cohesion	Low	Average	High
	Mutual respect	Low	Average	High
	Ability to help others	Low	Average	High
Freedom of choice and action	Opportunity to achieve what an individual values doing and being	Low	Average	High

Recommended Course of Action

Cyclic Use of Natural Resources

Technological responses	Recovery of ecosystem services by regeneration and recovery of natural environment
	Introduction of biopesticides and biological pest control
	Introduction of natural fertilizers
Legal responses	Enact rules to designate areas within the community for specific land use based on its suitability
Cognitive responses	Utilization of traditional knowledge to increase use of various resources in the environment
	Knowledge acquisition as it relates to environmentally friendly agricultural practices
Social and Behavioral Responses	Public education and awareness regarding the dangers of fertilizers and pesticides
	Public education and awareness regarding the importance of keystone species
Economic Responses	Eco-labeling to encourage more favorable agricultural practices and increase profits
	Relocation payment to facilitate proper zoning and land use

Resource Use based on Carrying Capacity and Resilience of Environment

Technological responses	Introduction of crops and animals with higher yield and productivity
Legal responses	Facilitate legal demarcation of the community with customary rights
Cognitive responses	Knowledge acquisition as it relates to disaster preparedness and risk management
Social and Behavioral Responses	Public education and awareness regarding waste disposal
	Public education and awareness regarding the importance of forest and tree species conservation
	Public education and awareness regarding pollution
Economic Responses	Eco-labeling to encourage more sustainable fishing and hunting practices

Recognition of the Importance and Value of Local Cultures and Traditions

Technological responses	Restoration and rehabilitation of degraded cultural sites
	Conservation of heritage sites
	Reuse of neglected sites
	Inventorying of local cultural heritage
Legal responses	Customary laws that recognize the cultural importance of specific sites
Cognitive responses	Resuscitation of traditional and historical knowledge that might have been forgotten or ignored by younger generation
	Capacity building
Social and Behavioral Responses	Public education and awareness about the cultural value of specific objects and sites
	Empowerment women and youths who are crucial in the preservation of culture
Economic Responses	Green tourism which increases income while protecting the environment

Collaborative Management of Natural Resources

Technological responses	Sustainable use of natural resources
	Energy efficiency improvement
	Adequate use of by-products derived from exploitation of natural resources
Legal responses	Enactment of laws that protects the rights of community members
	Prior and informed consent in relation to the exploitation of resources within the community
Cognitive responses	Knowledge acquisition on the roles and rights of community members and how their voices and opinions could be heard
Social and Behavioral Responses	Public education and awareness or human rights and entitlements
	Empowerment of women, youths and any minority groups in the community
Economic Responses	Incentive based interventions for environmentally friendly exploitation of natural resources

Contribution to Local Socio-Economies

Technological responses	Increasing crop yields to make the community more self sufficient in food supply
Legal responses	Compulsory early education
Cognitive responses	Utilization of traditional knowledge in medicinal plants and local remedies
Social and Behavioral Responses	Population policies (Family planning)
	Public education and awareness on health, nutrition and hygiene
	Public education and awareness on substance abuse
Economic Responses	Incentive based interventions for the employment of women, youths and minority groups
	Eco-labeling of natural resources obtained sustainably and in an eco-friendly manner

Questions for the person filling out the questionnaire

1. Is the tool user friendly and easy to fill out? □ Yes □ No
2. Were most of the terms used familiar to you? □ Yes □ No
3. Would you use this tool (or modify it) in your professional life to ascertain the status of a community that you are required to work in? □ Yes □ No
4. Was most of the information easy to acquire to answer the questions? □ Yes □ No
5. Do you think that someone who works in a community for an extended period of time would be capable of filing out this questionnaire quite easily? □ Yes □ No

Thank you so much.

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