

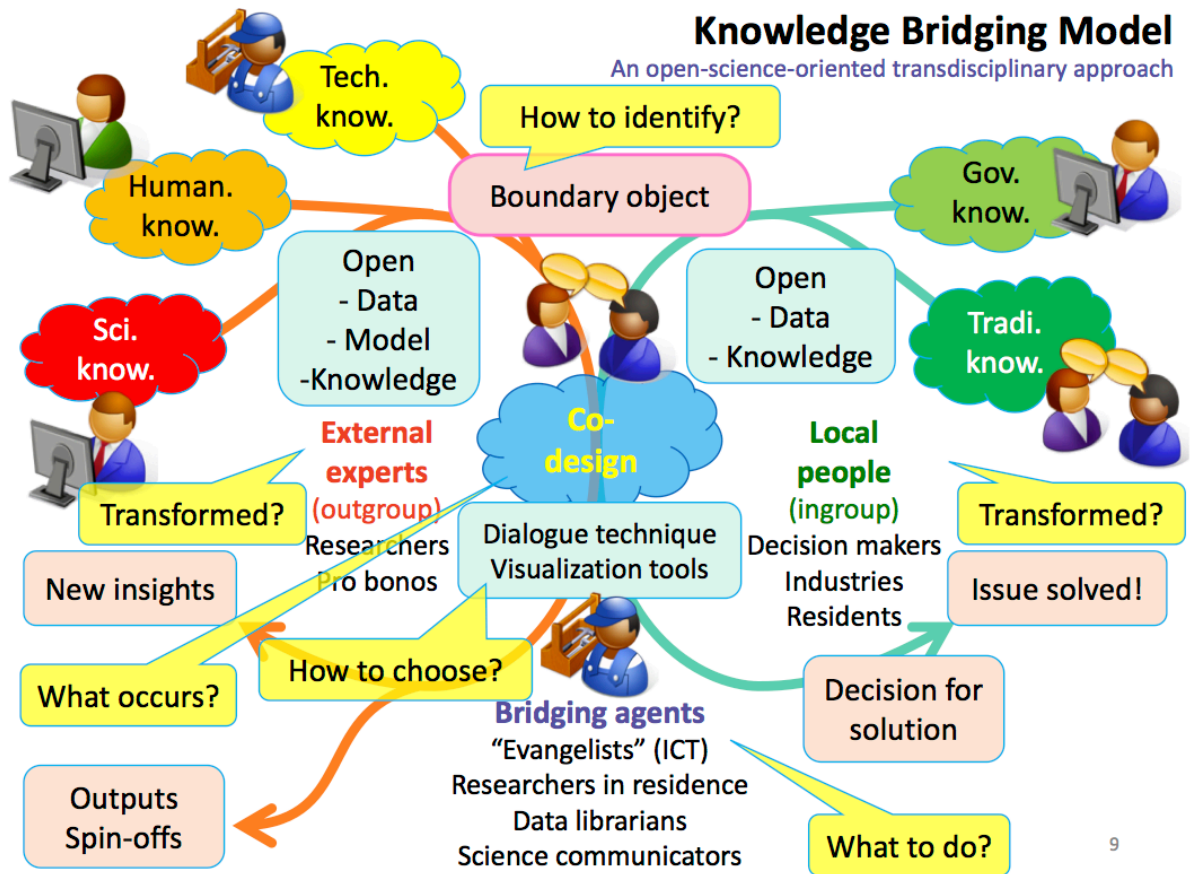
# Knowledge bridging model to visualize and overcome knowledge information gaps between societal actors with the help of bridging agents

\*Yasuhisa Kondo<sup>1</sup>

1. Research Institute for Humanity and Nature

Environmental issues tend to be a wicked problem, which is difficult to be solved by scientific approach only, because they are typically caused by a complex of natural and societal factors at diverse spatio-temporal scales from the global to the local, and because diverse societal actors, including governmental agents, industries, and residents, are usually involved as stakeholders. Solution of the issues may sometimes be obstructed by knowledge information gaps between actors. As a methodology to visualize and overcome such gaps, this paper presents the Knowledge Bridging Model, in which bridging agents, such as evangelists who lead transformation of value and life styles in the domain of ITC business, researchers in residence, data librarians in the context of open science, and science communicators, facilitate the mutual learning, trust, and understanding between societal actors by means of techniques for participatory equal dialogue such as *unconference* and *hatenathon* (questioning workshop) and tools for information visualization such as participatory GIS and ontological mapping. The discussion with participants of the poster session will contribute to elaborating this model.

Keywords: Transdisciplinary research, Societal actors, Bridging agents, Knowledge information gap



## How to deal with global environmental problems in a pastoral area of Kenya

\*Koki Teshirogi<sup>1</sup>, Benoit Hazard<sup>2,3</sup>, Christine Adongo<sup>2</sup>, Ueru Tanaka<sup>1</sup>

1. Research Institute for Humanity and Nature, 2. Ecole Des Hautes Etudes en Sciences Sociales (EHESS), 3. Centre national de la recherche scientifique (CNRS)

Toward solving the global environmental problems, challenges not only in developed countries but also in developing countries are important. Thus, in developing countries, there are many projects including development assistance and private investment, for the approach to environmental problems at regional and national level. On the other hand, there is little information from the bottom-up approach on the impact of projects about environmental issues to the local community, local inhabitants and landscape. In this presentation, we show some example such as geothermal and water management project with large scale investment in the pastoral areas of Kenya. And we want to think about how we can advance cooperation with local society in this area.

Keywords: Africa, Clean energy, Water management, Local community

## Analysis of land use change with its policy driving during recent sixteen years in Horchin desert-an example of Ar-Horchin Banner in Inner Mongolia, China

\*wulan tuya<sup>1</sup>

1. College of Geographical Science Inner Mongolia Normal University

The modern agricultural prescribed form of the Horchin desert was formed in the middle Qing Dynasty, and then it developed through 20 century. The increasing or decreasing of farming area, increasing or decreasing of intensity of agricultural activities, are the direct causative factors for the land use changes in this region. Consequently, these factors caused quantitative and qualitative changes of grassland and farming area, being as the most intuitive expression of the Horchin desert land use changes. In this study, we selectively analyzed farm land changes in Ar-Horchin Banner in recent 60 years using statistical data of farm land from 1946 to 2013, LANDSAT-5 TM images of 1986, 1996 and 2006, LANDSAT-8 OLI images of 2013; meanwhile, we discussed the driving relationship between the land policy changes and farm land, and we concluded as below. (1) In recent 60 years, the area of reclamation in the Ar-Horchin has been gradually northing to high latitude region, and the farm land area has been increased, the scale of farm land area has been experienced a severe process. (2) From the establishment of Inner Mongolia Autonomous Region, the principle policies for agriculture, such as “The Land Reform” (from 1947 to 1952), “The Agricultural Collectivization” (from 1953 to 1977), “The Household Contract Responsibility System” (from 1978 to 1999), “The Return the Grain Plots to Forestry and Grassland” (from 2000 to now), have been conducted in the study area. (3) Seen from the result of farm land scale change coincident with the tightness of agricultural policies in the study area, we considered the level of economic development, the consciousness of residents for ecological and environmental, agricultural technologies are also factors that cannot be ignored for land use change in the study area.

Keywords: Horchin desert, policy driven, land use, Inner Mongolia Autonomous Region, China

## Vegetation Structure and Utilization of Natural Forests in Shimizuyama, Miyama city, Fukuoka prefecture, Japan

\*Daiki Yamada<sup>1</sup>, Ryuta Shimizu<sup>1</sup>, Kiyomi Hayashi<sup>2</sup>, Tatsuto Aoki<sup>2</sup>

1. School of Regional Development Studies, Kanazawa University, 2. Institute of Human and Social Sciences, Kanazawa University

In recent years, the needs and interests of utilization of natural environment are increasing. But there are many problems between the use of forest resources and the management of natural forests.

The problem is difficult to design the management and use system because both the manager and the user do not understand the value of forest resources correctly.

In Japan, on the other hand, the evergreen forest, many of which are natural forests, is now destroyed by human impact and remains only a few as shrine forest. In addition, the evergreen forest in the Kyushu is a microcosm of the Japanese evergreen forest because it is composed of representative plant communities of evergreen forests in the east of Kyushu in Japan. Therefore, in considering future conservation of natural forests in Japan, it is meaningful to target shrine forests, which are evergreen forests in the Kyushu. So in this study, we examined conservation measures of natural forests and suitable usage methods of them in natural forests in Shimizuyama, Miyama City, Fukuoka Prefecture.

Shimizuyama is located in the northeastern part of Miyama City, Fukuoka Prefecture. Its elevation is about 350m. Kiyomizudera temple is at the middle of Shimizuyama. There are mountain roads and roadways from the parking to near the summit. So we can move by car from the foot to the summit. In addition, *Symplocos glauca* - *Castanopsis sieboldii* of *Camellia japonica* - *Gebiet* spreads around the Kiyomizudera temple as a shrine forest.

The method of this research is divided into two, one to grasp the actual condition of vegetation structure of natural forest and one to grasp the actual situation of forest resource utilization by the people.

The method of grasping the actual condition of the vegetation structure of natural forest was carried out by the line transect method. We set a line orthogonal to the approach road to Kiyomizu temple and recorded vegetation structure and environmental characteristics on that line. Also, the line crosses the mountain roads used by climbers and others. And we verified human impact to vegetation structure based on the obtained data. The verification method is to compare with the structure of the second-growth forest. We also verified a human impact in the part adjacent to the mountain roads and planting area.

As a method of grasping the actual situation of forest resource utilization by people in the investigation area, we mainly took three ways. The first is an interview visitors. The second is an interview with young priests of Kiyomizudera temple as a manager of Shimizuyama. The third is a questionnaire survey for groups of climbers in Fukuoka. Also, a question was asked them about the image of the favorite forest. As a result of the survey, on the whole, it can be said that it is the structure of the natural forest. However, in a more detailed vegetation structure, there was human impact in the part adjacent to the mountain road and the planting part.

In forest resource utilization, Shimizuyama has three values, natural value, cultural value and climbing value. As a reality of visitors, many of them need climbing value and cultural value.

Considering the method of utilization of forest resources from the above, we think that it is necessary to give natural value by the characteristics of natural forest for the purpose of utilization. This is because using forest resources with the purpose of giving natural value will create understanding of natural forests and encourage appropriate use.

However, there will be human impact. Therefore, it is necessary to further study methods to prevent the influence, appropriate management and countermeasures after being influenced.

Keywords: natural forests, utilization of forest resources, shrine forests, vegetation structure, human impact