

# Kunisaki Peninsula Usa Integrated Forestry, Agriculture and Fisheries System

May, 2013  
Oita Prefecture, Japan

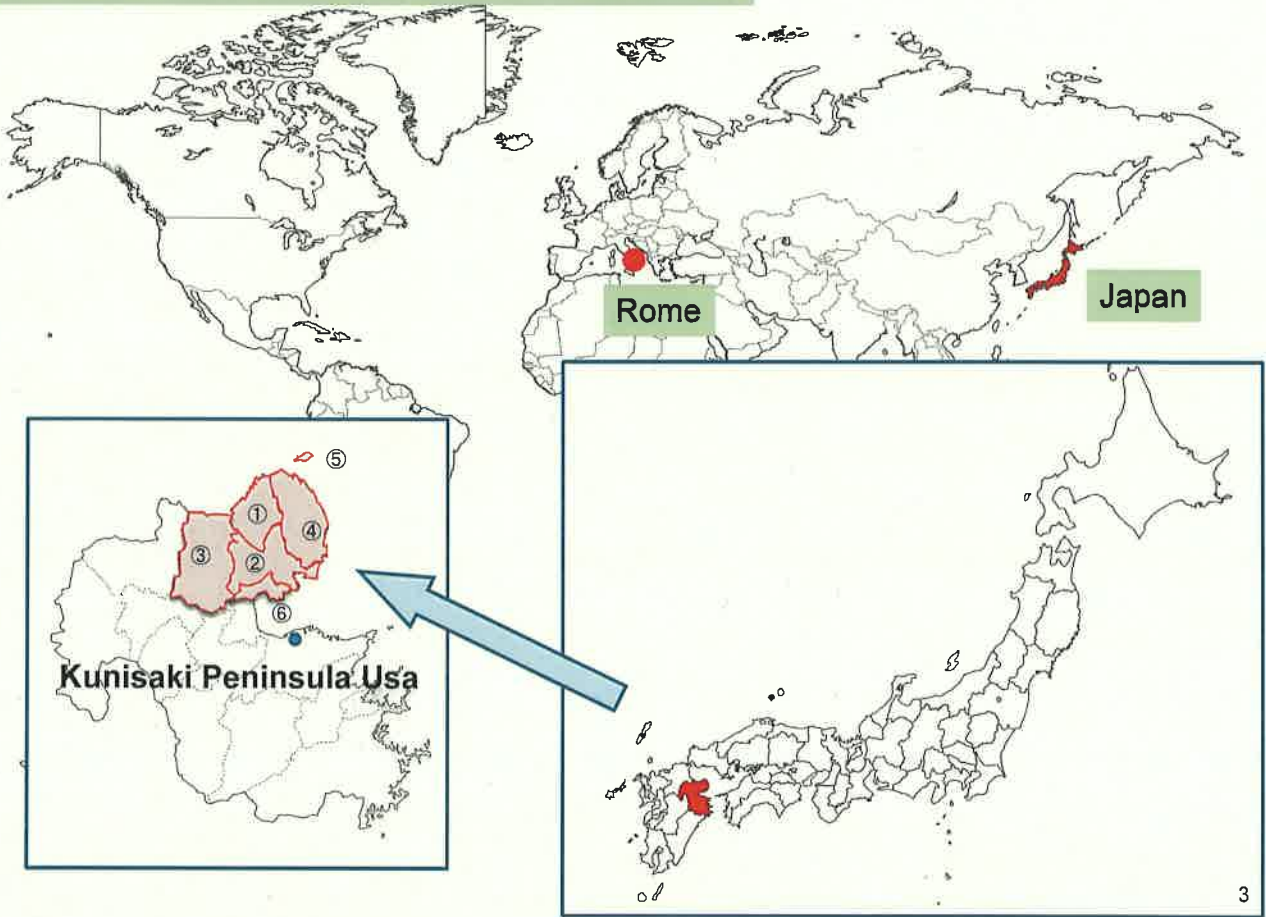
GIAHS Promotion Association of Kunisaki Peninsula Usa Area

Kunisaki Peninsula Usa/ Japan/ Rome(FAO)



Petro Kasui Kibe

# Kunisaki Peninsula Usa/ Japan/ Rome(FAO)

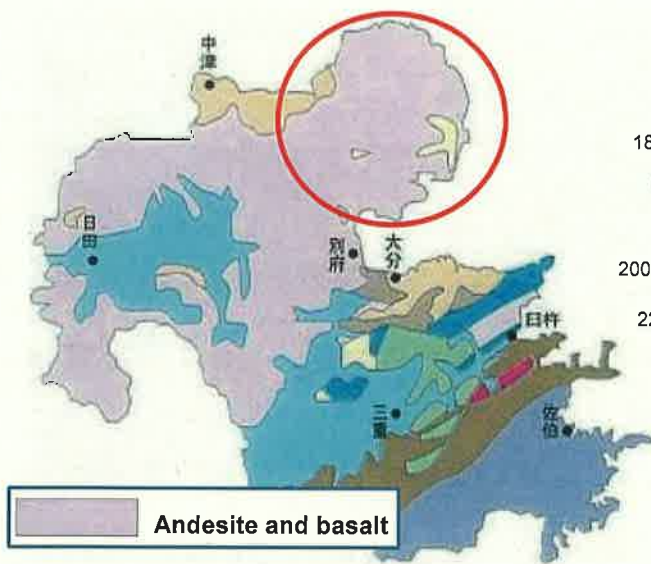


## Characteristics of the Proposed GIAHS

- ◆Geographical : Round peninsula with Mt.Futago at the center  
Rivers are short and steep
- ◆Climatic: Warm temperate and humid(low rainfall in the winter season)
- ◆Historical: Fusing Shinto and Buddhist philosophies flourished
- ◆Landscape: Paddy fields, Irrigation ponds and Sawtooth Oak forests



# Geological and Climatic Features of Kunisaki Peninsula Usa



Annual average temp. 16°C  
Annual precipitation 1,500mm

Highly porous volcanic soil that absorbs rainfall easily;  
Many rivers of this area are short and steep;  
This area has a characteristic of low rainfall in winter;

→ This area struggled with the provision of water from ancient times.

# Japan's Largest Sawtooth Oak Forests in Kunisaki Peninsula Usa



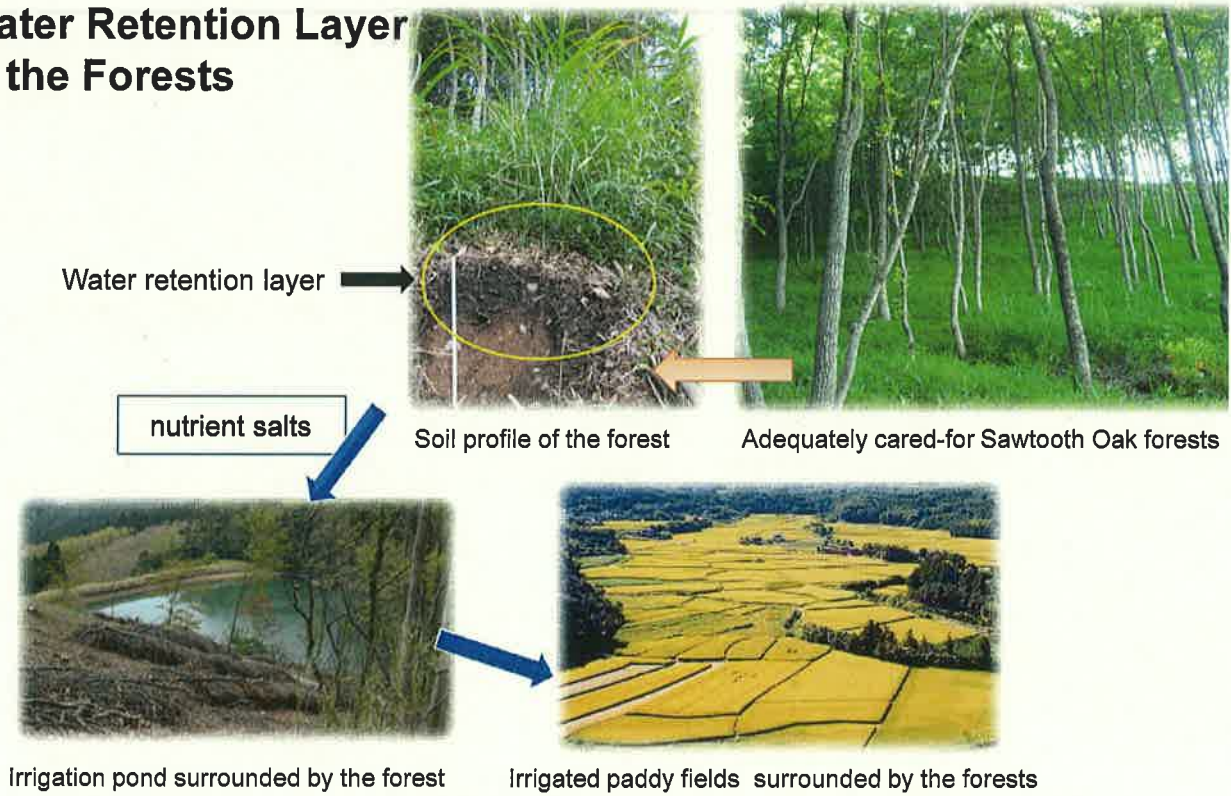
The total stock volume of Sawtooth Oak in Oita pref. ranks as the largest in Japan (22%)

# The Sawtooth Oak Plant Re-grows in 15 Years



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## Water Retention Layer in the Forests

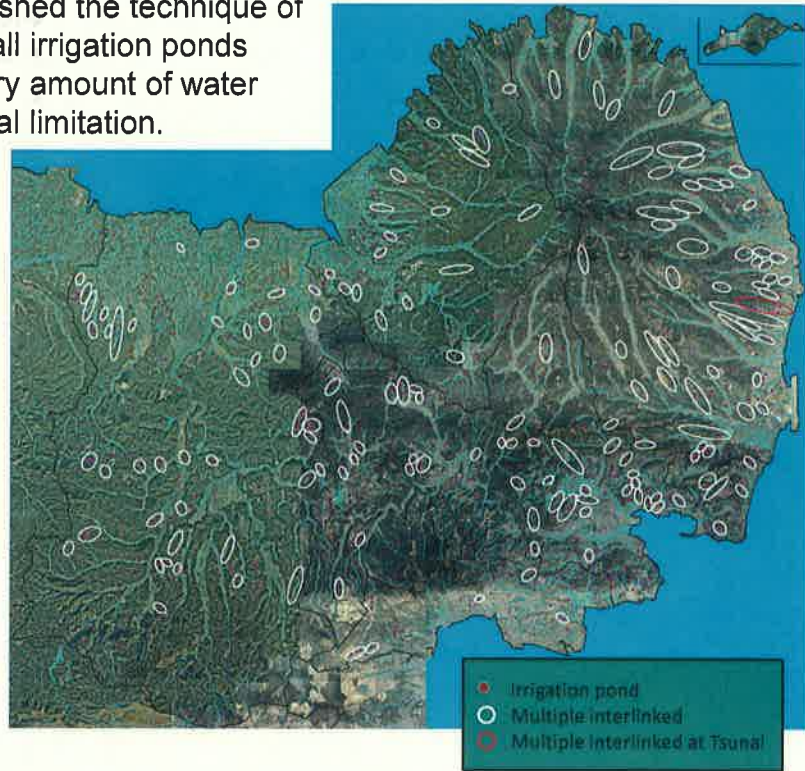


Downpours of rain in this region absorb into the soil where fallen leaves etc. have accumulated and become spring water containing nutrient salt, sustaining paddy agriculture and coastal fishing.

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# Managing the Multiple Interlinked Irrigation Pond System

Ancient farmers established the technique of multiple interlinked small irrigation ponds to provide the necessary amount of water because of geographical limitation.



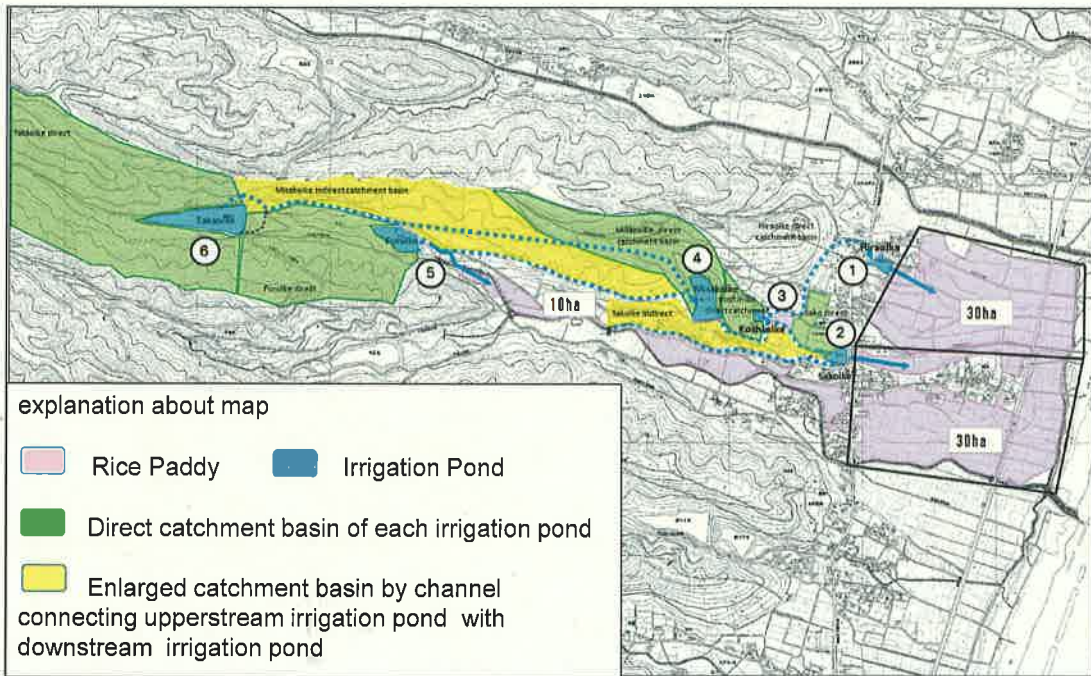
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Multiple Interlinked Irrigation Pond System at Tsunai

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# Water Supply System with Interlinked Multiple Irrigation Ponds



Proper management of Sawtooth Oak forest and multiple irrigation ponds contributes greatly to food production and biodiversity maintenance, and contributes to global food security by expanding alternative sources of food and livelihoods from land unsuitable to arable cultivation.





### Production-Process of Log Wood Cultivated Shiitake

#### Feature;

1. Reforestation by Shiitake mushroom producer
2. Delivering high quality dried log wood cultivated Shiitake (40% of national share)
3. Bright Hoda-ba in broadleaf forests

#### History;

1. Shiitake cultivation in Japan started during the 17 century AD in Oita
2. Started Kunisaki area in 1885
3. Discovery of 'plug spawn' made by Kisaku Mori in 1942
4. Abundant Kunugi forest by encouraged afforestation (49% in total forest area)

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## Numerous Grant Schemes for Upgrading Shiitake Production Efficacy



The "Oita Shiitake Genbei School" for young farmers,  
providing incentives and leadership training

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## Dried Log Wood Cultivated Shiitake is Popularizing and Expanding Globally



Japanese food



Chinese food

Dried log wood cultivated Shiitake is an indispensable ingredient in cooking and soup bases in Japanese food, used to increase the amount of guanylic acid which serves as one of the main three taste components of Japanese cuisine

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## Shichitoui Industry Which Remains only this Region in Japan



Harvest and dehydrate in summer



Weave in winter

### Features and History;

1. Shichitoui (*Cyperus monophyllus* VAHL) for durable weaving tatami mats
2. Indigenous farming practice in Kunisaki and brought large profits in small farmland
3. Shichitoui cultivation in this region began about 350 years ago
4. Only one ha planted in Kunisaki at 2011  
( difficult mechanization, change in lifestyle, etc.,)
5. Establishment of 'Kunisaki Shichitoui' Promotion Association(2010)



Cut surface

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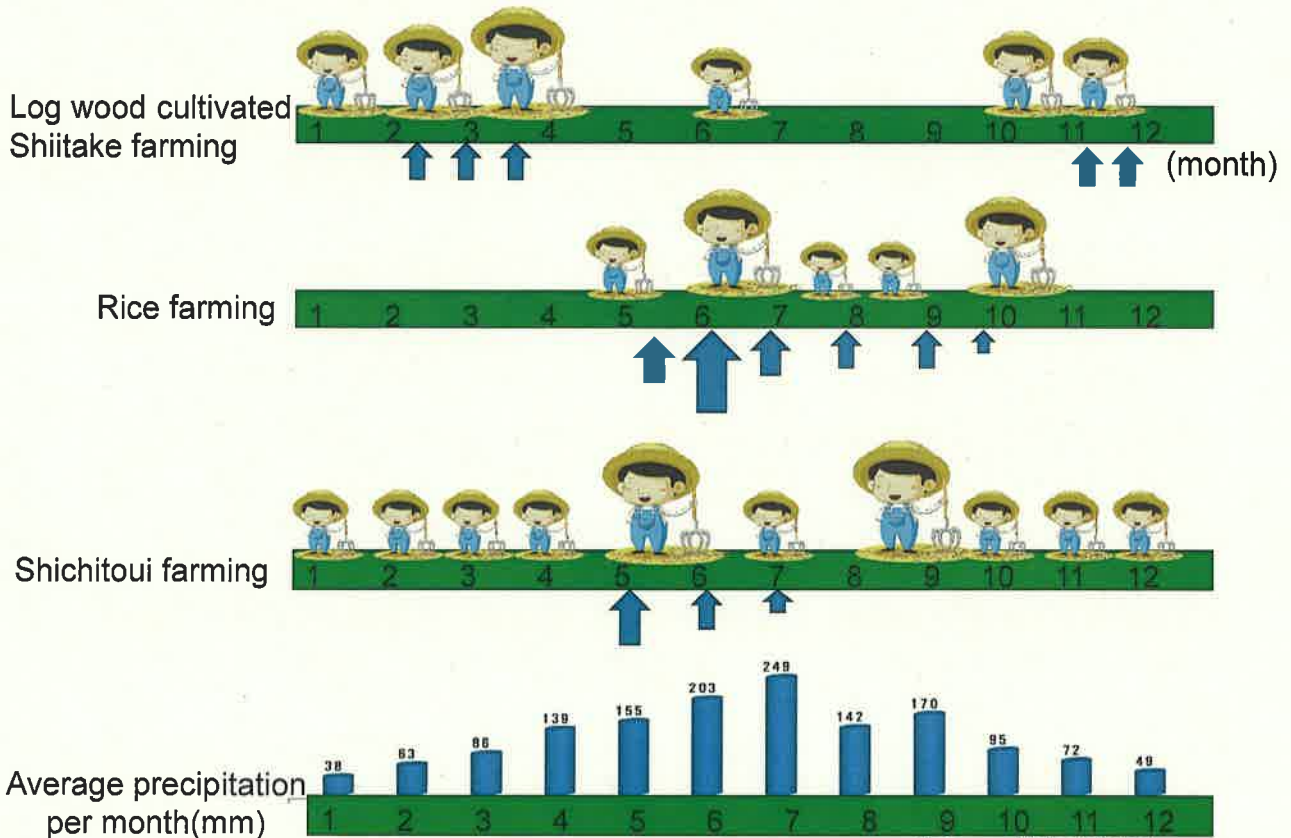
# Rich Crop Diversification in this Region



As large scale paddy agriculture was not developed in this region, it became necessary to cultivate a commodity that complemented wetland rice.

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## Distribution Image of Limited Water Resource (↑) and Family Labor Force (👨)



Data from Japan Meteorological Agency: Point Musashi area(2003~2010)

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# Conserving Biodiversity of Wildlife and Threatened Species

Geographical features in this region and adequate managements of Sawtooth Oak forests and multiple irrigation ponds allow a variety of plants and animals to be adapted to that environment.



Iwagirisou  
(*Opithandra primulides*)



Oita salamander  
(*Hynobius dunni* Tago)



Little Curlew  
(*Numenius minutus* Gould)



Goosefoot  
(*Liobagrus reinii* Hilgendorf)

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## Culture, Values and Social Structures



Tashibunosho



The Usa Hachiman Shrine,  
a water Deity



The Mineiri ritual, bridge to connect  
priests and ordinary people

Tashibunosho not only retains the rural landscape with terraced paddy fields as it was during the 11th Century in adjacent areas of the Usa Hachiman shrine, it is also a great example of how local cultures evolved through a harmonious relationship between nature and farming societies, involving traditional tilling methods, in the mountainous areas of the region.



The Amabiki Shrine,  
praying steady supply of  
water

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# History of Paddy Agriculture and Unique Food Culture



Historical remains of the Ankokuji Hamlet

The historical ruins of the Ankokuji hamlet were found on the right bank of the Tabuka River, a region that is now covered in rice paddies. Characteristic religious festivals still remain today.



Ureshino



Mitori-okowa

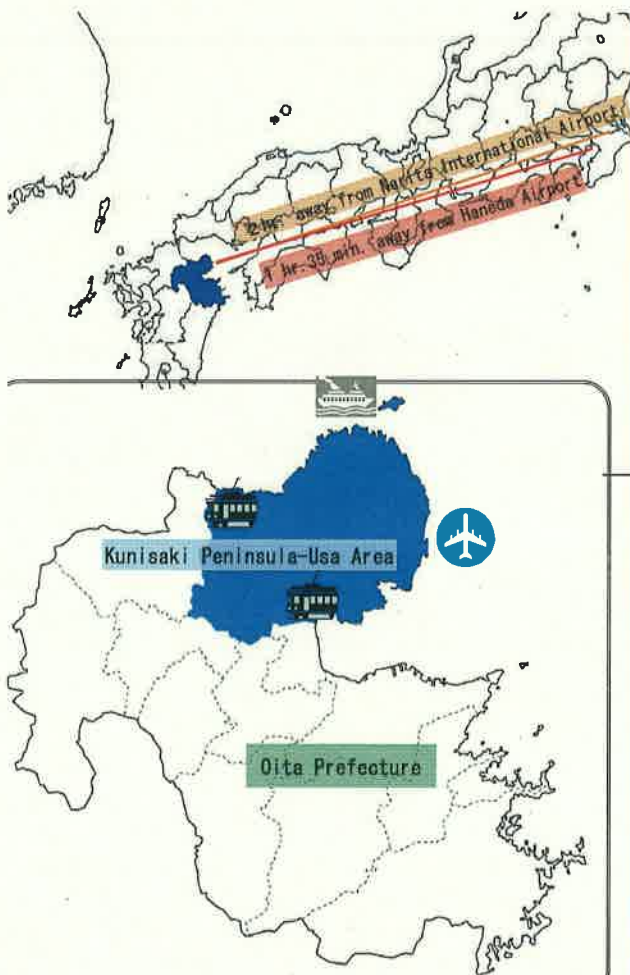
Rich tradition of preparing local cuisine with local farm products or the local fish catch.



Syujo-onie festival, gratitude for the harvests



Doburoku (raw sake) festival, celebrate good harvests



## Expected Social and Ecological Benefits of the GIAHS

1. Feasibility of managing traditional cultural capital in the region
  - ① Efforts to manage Sowtooth Oak forests and irrigation ponds sustainably
  - ② Continuous system of managing associated agricultural systems into the future
  - ③ Revitalization of agricultural practices and ecosystem maintenance
2. More interaction between urban and rural units
  - ① Increase in the potential of green tourism
  - ② Understanding about rural life and increase in returnee migrants
3. Strengthening local branding
  - ① Dried log wood cultivated Shiitake into global identity
  - ② Revitalization of farmers, foresters and fishermen through a new industrialization

## Promoting interaction with other GIAHS sites and researchers

→ Further activation of this area