KEY RECOMMENDATIONS

1. Take a *Satoyama-Satoumi* Approach

Policies that take a ***satoyama-satoumi* approach** towards managing biodiversity and ecosystem services should be developed. This approach recognizes the mosaic composition of ecosystem types and their inherent interlinkages.

2. Decentralized Decision-Making

New institutions should be designed **under the lens of landscape governance** that can manage both public and private lands. These institutions are needed to govern the **new "commons"** and allow for **decentralized decision-making** on the use of land and water bodies within a mosaic structure of different ecosystem types.

3. Equitable Access and Use

Institutions that complement the institutions of the new commons should be designed. This should ensure **equitable access and use of ecosystem services** provided by *satoyama* and *satoumi* landscapes.

4. Ten-year Research Programme

A ten-year research programme with adequate funding and human resources to gain better understanding of the dynamics of *satoyama* and *satoumi* ecosystems, their linkages, and their relationship with human well-being and biodiversity should be devised and put into action. This would be able to **provide input to international assessment processes** like the Intergovernmental Panel on Climate Change (IPCC) and the soon-to-be-established Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

5. Assessments with a Wide Scope

Comprehensive, integrated assessments of potential *satoyama* and *satoumi* ecosystems across a number of developing and developed countries should be conducted. These assessments will establish baselines for ecosystem services, and to form an epistemic community of scholars and practitioners within and across countries who can continue to study and provide guidance to policymakers.

The JSSA is an experimental exercise for Japanese society that includes local scientists, policymakers, and practitioners, among others. In order to create a platform for translating scientific knowledge into policy and relevant action at the local and national levels, it attempts to provide relevant information and useful models for ecosystem capacity assessment.

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Japan *Satoyama Satoumi* Assessment

Satoyama-Satoumi Ecosystems and Human Well-Being:

Socio-Ecological Production Landscapes of Japan

The Japan *Satoyama* and *Satoumi* Assessment (JSSA)

is a study of the interaction between humans and terrestrial-aquatic ecosystems (*satoyama*), and marine-coastal ecosystems (*satoumi*) in Japan. The study examines and analyses changes which have occurred in these ecosystems over the last 50 years and identifies plausible alternative futures of those landscapes in the year 2050 taking into account various drivers such as governmental and economic policy, climate change, technology, and socio-behavioural responses.

GOALS AND OBJECTIVES

The overarching goal is to **provide scientifically credible and policy-relevant information** on the significance of ecosystem services provided by *satoyama* and *satoumi* landscapes, and their contributions to economic and human development for the use of policymakers.

The specific objectives are to:

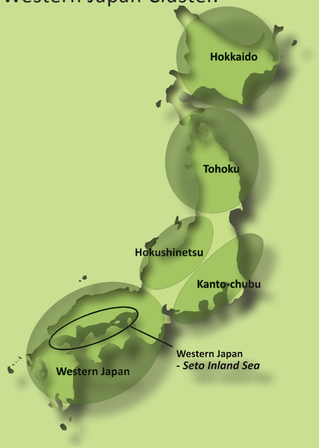
- improve understanding of the relationship between *satoyama* and *satoumi* with biodiversity, ecosystem services and human well-being;
- provide policymakers in Japan with a sound and credible scientific basis for the *Satoyma* Initiative the Japanese government intends to promote;
- establish credible baselines for a number of key ecosystem services provided by *satoyama* and *satoumi*;
- provide information on possible future trends in ecosystem services provided by *satoyama* and *satoumi* under a specific hypothesis on plausible alternative futures;
- identify sound policy responses to address the decline in ecosystem services through the use of *satoyama* and *satoumi* management in Japan;
- provide the scientific basis for the use of *satoyama* and *satoumi* in an international context, and in particular, as part of the *Satoyama* Initiative.

SCOPE

The timeframe of the assessment is changes that have occurred in *satoyama* and *satoumi* in **the last 50 years** since the end of World War II.

Geographically, the assessment was undertaken in five major "clusters" throughout Japan, with the goal of encompassing different geographical, climate, ecological, social, economic, and political characteristics. These clusters are:

1. Hokkaido Cluster
2. Tohoku Cluster
3. Hokushinetsu Cluster
4. Kanto-chubu Cluster
5. Western Japan Cluster.



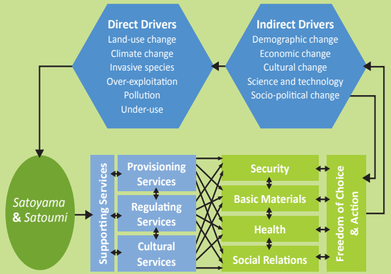
METHODOLOGY AND KEY CONCEPTS

The JSSA adopts the **ecosystem services conceptual framework** developed by the Millennium Ecosystem Assessment (MA) for the following reasons:

- The centrality of human well-being in considerations of ecosystem services;
- Recognition of the interdependency, synergy, and trade-offs between ecosystem services and human well-being;
- Acknowledgement of different temporal and spatial scales that impact this interdependency.

A central focus of the JSSA is to closely detail:

- how changes in *satoyama* and *satoumi* in Japan during the past 50 years have occurred;
- what their significance is for human well-being; and looking forward,
- how transformations within the next half-century might impact the level of biodiversity, ecosystem services, and thus human well-being attainable, both in Japan and globally.



Definition and Characteristics of *Satoyama* and *Satoumi*

The JSSA defines *satoyama* and *satoumi* landscapes as **dynamic mosaics of managed socio-ecological systems producing a bundle of ecosystem services for human well-being**.

The primary characteristics of these landscapes are:

1. *Satoyama* is a mosaic of both terrestrial and aquatic ecosystems comprised of wood lands, plantation, grasslands, farmlands, pasture, irrigation ponds and canals, with an emphasis on the terrestrial ecosystems.
2. *Satoumi* is a mosaic of both terrestrial and aquatic ecosystems comprised of seashore, rocky shore, tidal flats, coral reefs, and seaweed/grass beds, with an emphasis on the aquatic ecosystems.
3. *Satoyama* and *satoumi* landscapes are managed with a mix of traditional knowledge and modern science (reflective of the socio-ecological contexts).
4. Biodiversity is a key element for the resiliency and functioning of *satoyama* and *satoumi* landscapes.

KEY FINDINGS

1. Mosaic Composition

The critical feature of *satoyama* and *satoumi* landscapes is the **mosaic composition** of different ecosystem types that are managed by humans to produce **a variety of ecosystem services benefiting human well-being**.

2. Drop in Resiliency

Satoyama and *satoumi* landscapes have undergone **significant decline over the last 50 years**, resulting in a **drop in the resiliency** of the coupled socio-ecological production systems to provide a sustainable supply of ecosystem services.

3. Consequences for Humans and Biodiversity

Continued loss of *satoyama* and *satoumi* landscapes has **important and potentially negative consequences for human well-being and biodiversity**. There is, however, still a need for more research on *satoyama* and *satoumi* and the contribution they might have in the future for human well-being.

4. Integrated Intervention

Integrated approaches, including **citizen participation**, have been implemented increasingly over the past 10 years and show potential for reducing biodiversity loss and maintaining sustainable flows of ecosystem services.

5. New "Commons"

Critical to the success of a more integrated and holistic approaches to ecosystem management is **creation of a new "commons"**, understood both as a system of co-management of ecosystem services and biodiversity within private and public land, and as a single system to produce a bundle of ecosystem services for direct and indirect use by society.