Preparing Guidance for Sustainability Decision making

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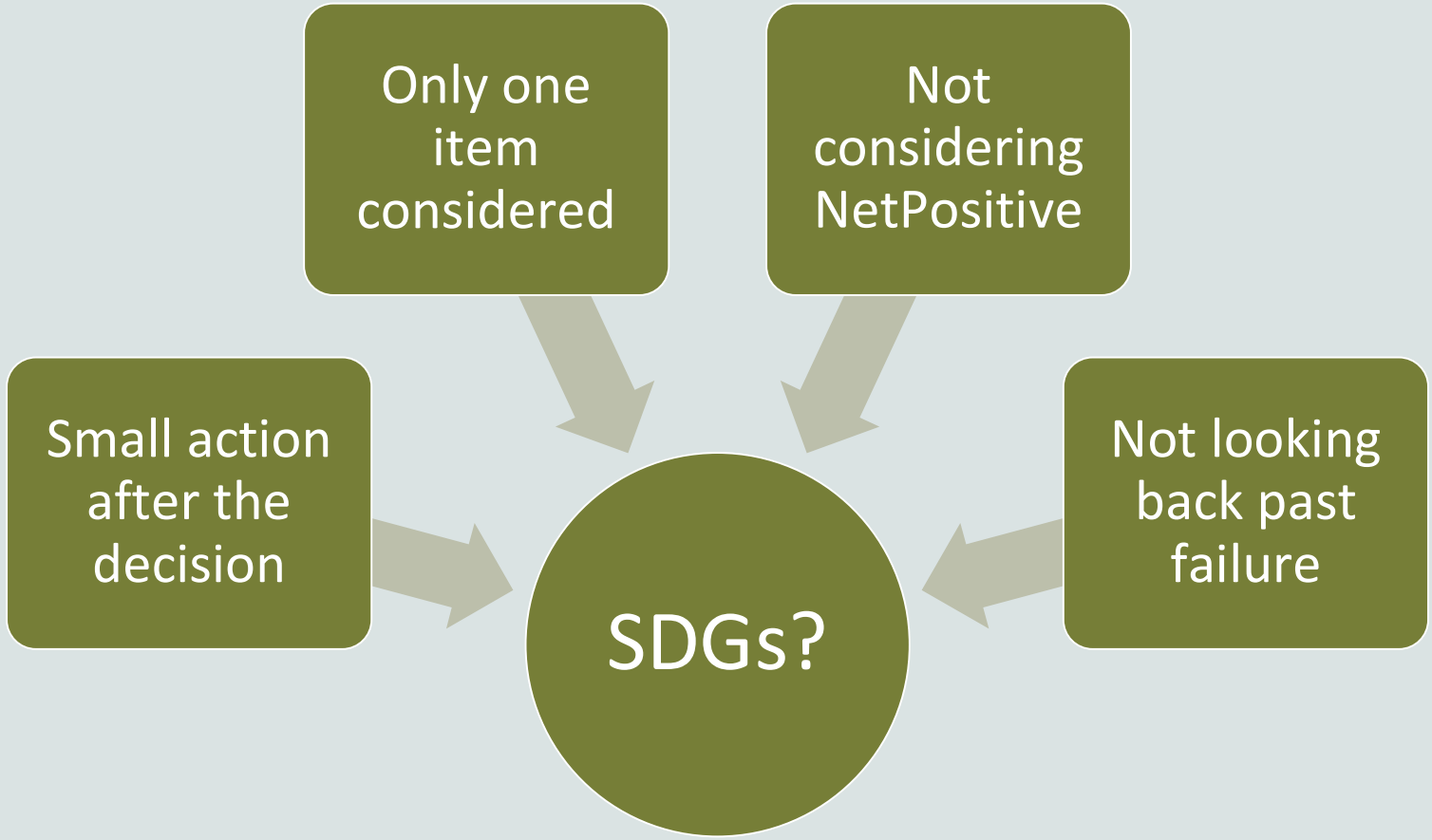
Hiroo Kasagi, Yoshika Yamamoto

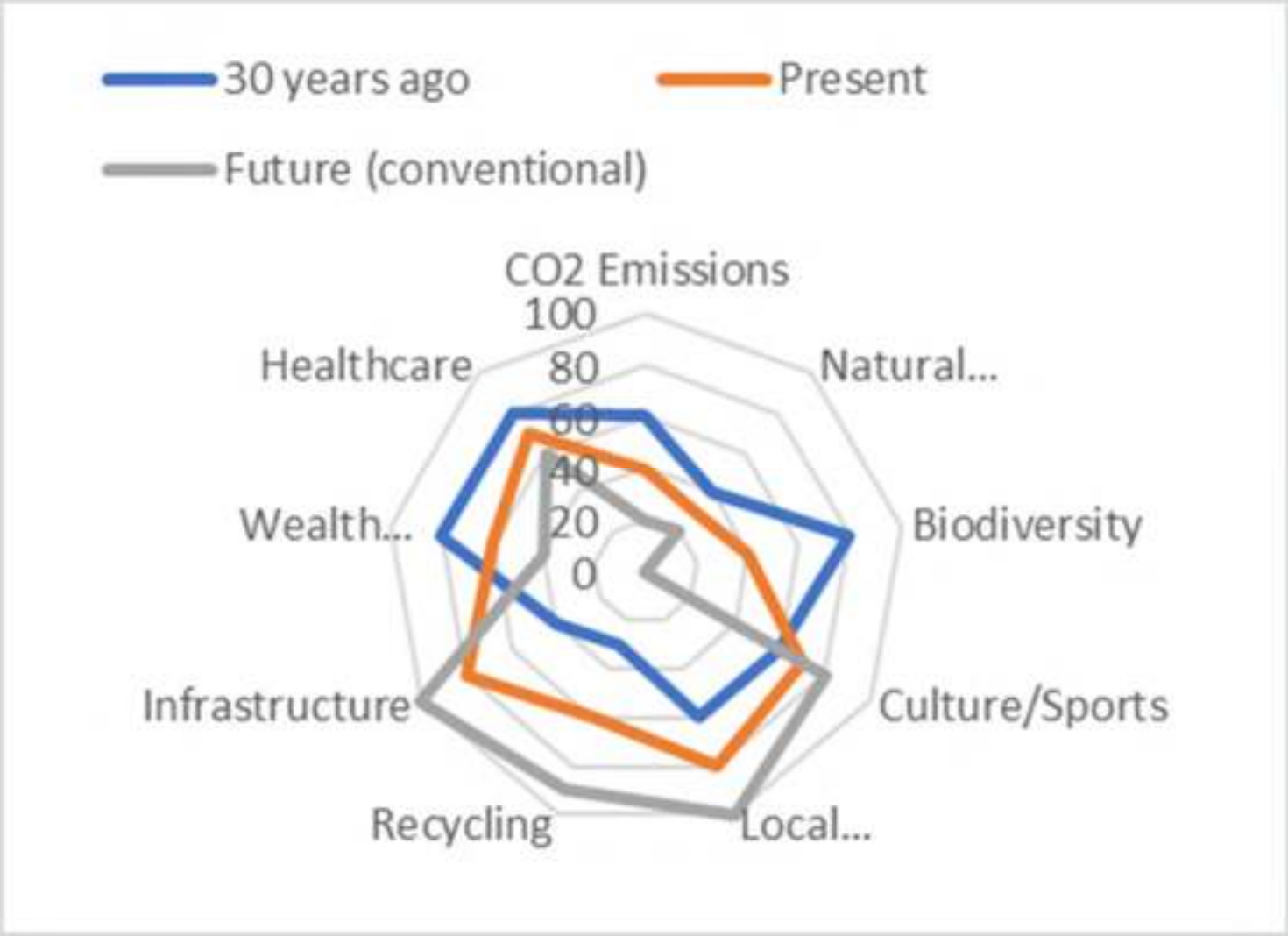
Non-essential SDGs efforts

- Unessential SDG actions may ultimately lead to an unsustainable world

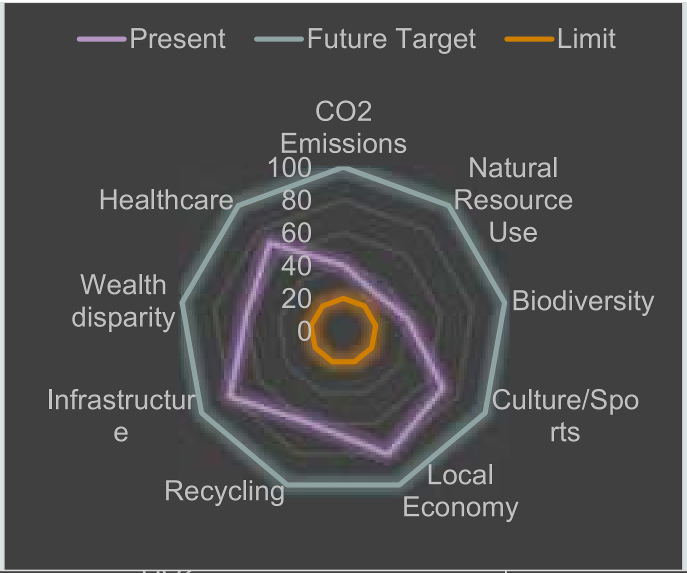


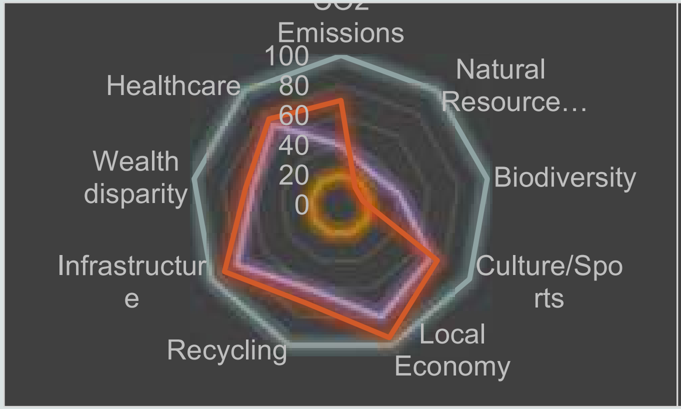
What we get? What we lost?

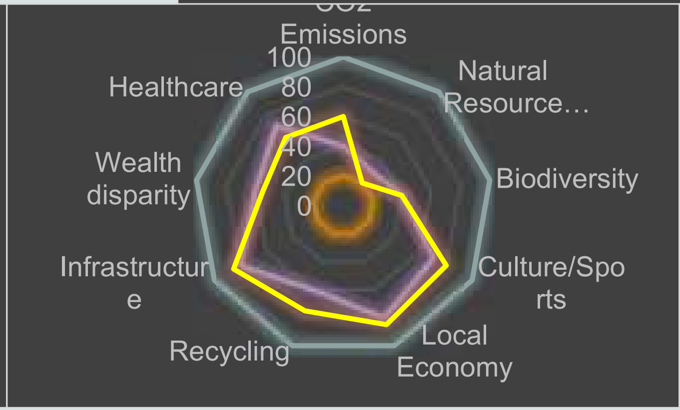
- Without looking past and relationship of the items, we cannot plan future.

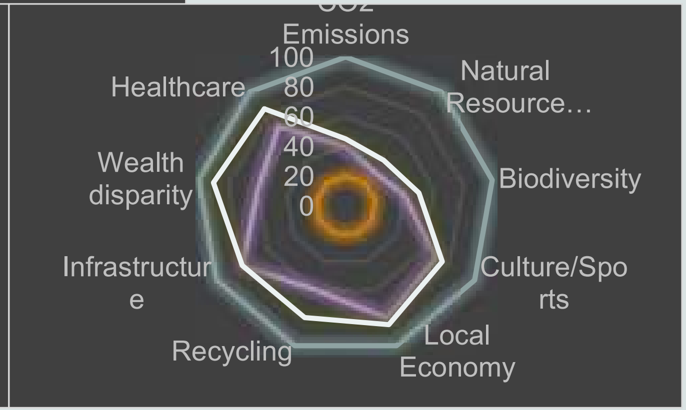


Which plan do you select?









Plan A
Economy and greenhouse gases are approaching target, but natural resources fall below threshold

Plan B
Natural resources are above threshold but worse than current conditions

Plan C
Approaching target values in all categories.

Why guidance?

Legal system?

Only big projects?

Team

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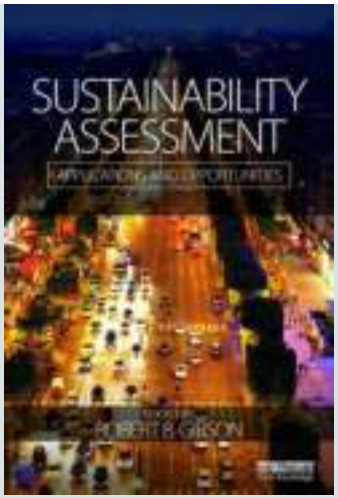
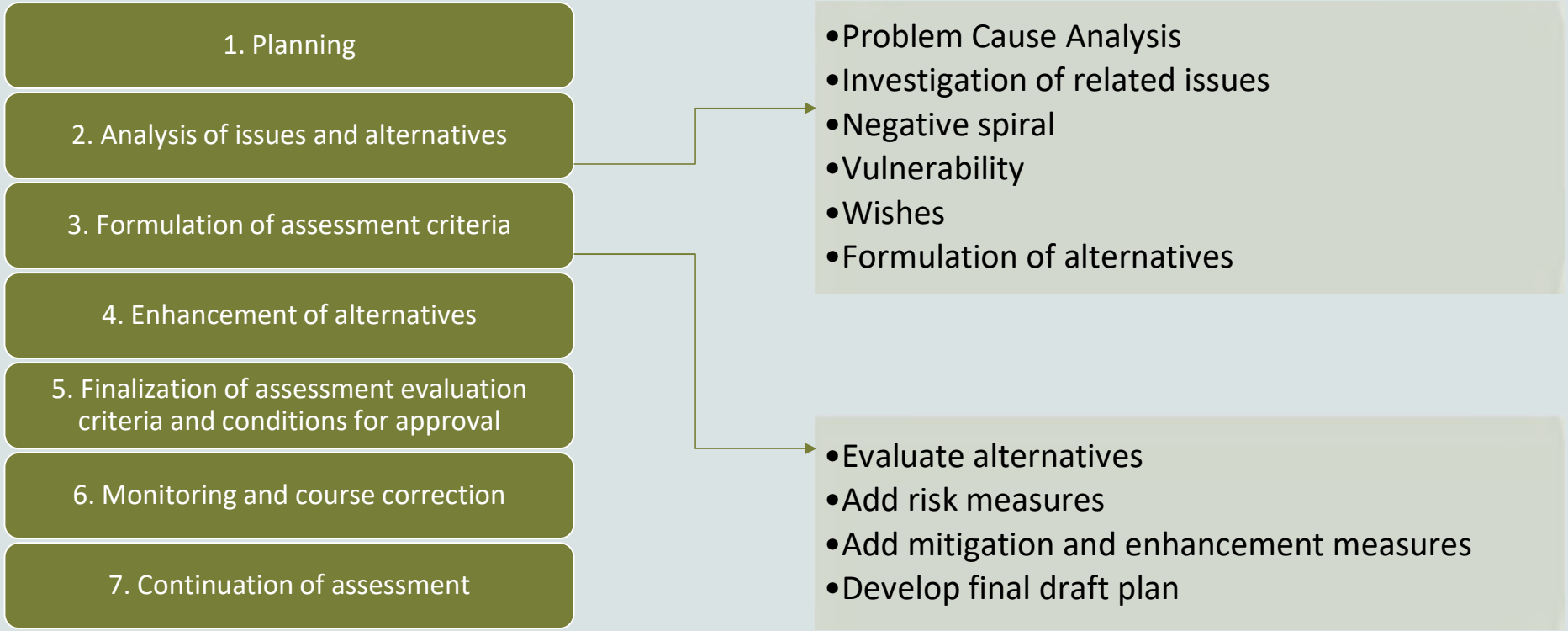
Methodology



- Understand sustainability assessment, strategic thinking, and system thinking,
- Understand the decision-making procedures at each level, from national to individual,
- Collect actual case or assume a fictitious case study at each level and think about how it can be integrated into real decision-making procedures,
- Determine the principles of decision-making procedures that are common to all, and
- Summarize the procedures and precautions for consideration at each level as guidance.

Steps used in the guidance



Prepared example in the guidance

Actual case

- Waste Disposal Plan at Fujimae Tidal Flat ← Introducing today
- Aichi Expo site planning

Fictitious cases

- Should I buy a pain killer for my backache?
- Should the local government expand roads?
- Should the private company build a new factory?
- Where should that community sports club operate toward?

Example 1: Waste Disposal Plan at Fujimae Tidal Flat

1. Planning
2. Analysis of issues and alternatives
3. Formulation of assessment criteria
4. Enhancement of alternatives
5. Finalization of assessment evaluation criteria and conditions for approval
6. Monitoring and course correction

Example 1: Waste Disposal Plan at Fujimae Tidal Flat

https://www.city.nagoya.jp/kankyo/page/0000111110.html

Step 1 - Planning

1981 105 ha of **Fujimae Tidal Flat is designated as a waste disposal site** in the port plan

1989 The reclaimed area is reduced from 105 ha to 70 ha.

1989 Nagoya mayoral election. Opposition parties run candidates and make the Fujimae issue a point of contention.

1992 In consideration of preservation of the natural environment, the landfill area is further reduced to 52 ha.

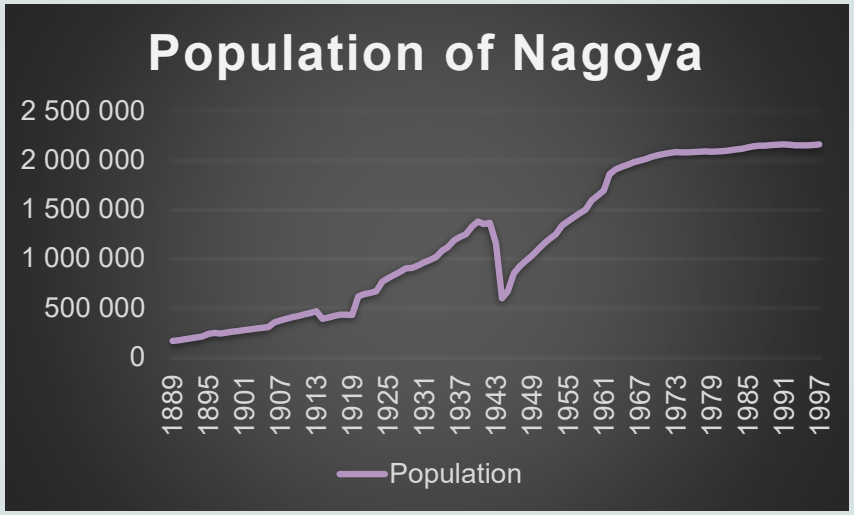
1993 The Nagoya City Land Development Corporation will acquire approximately 118 ha of land.

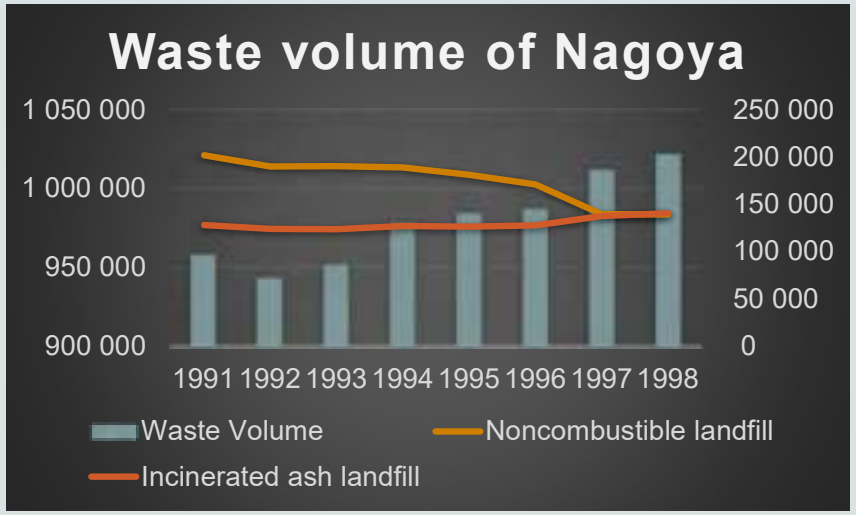
1993 The landfill area will be further reduced to 46.5 ha and the project implementation will be decided.

1994 The **EIA procedure is initiated**.

(https://www.jichiro.gr.jp/jichiken_kako/report/rep_yamagata28/jichiken_hokoku/kankyo09/kankyo09.htm)

Step 2 - Analysis of issues and alternatives

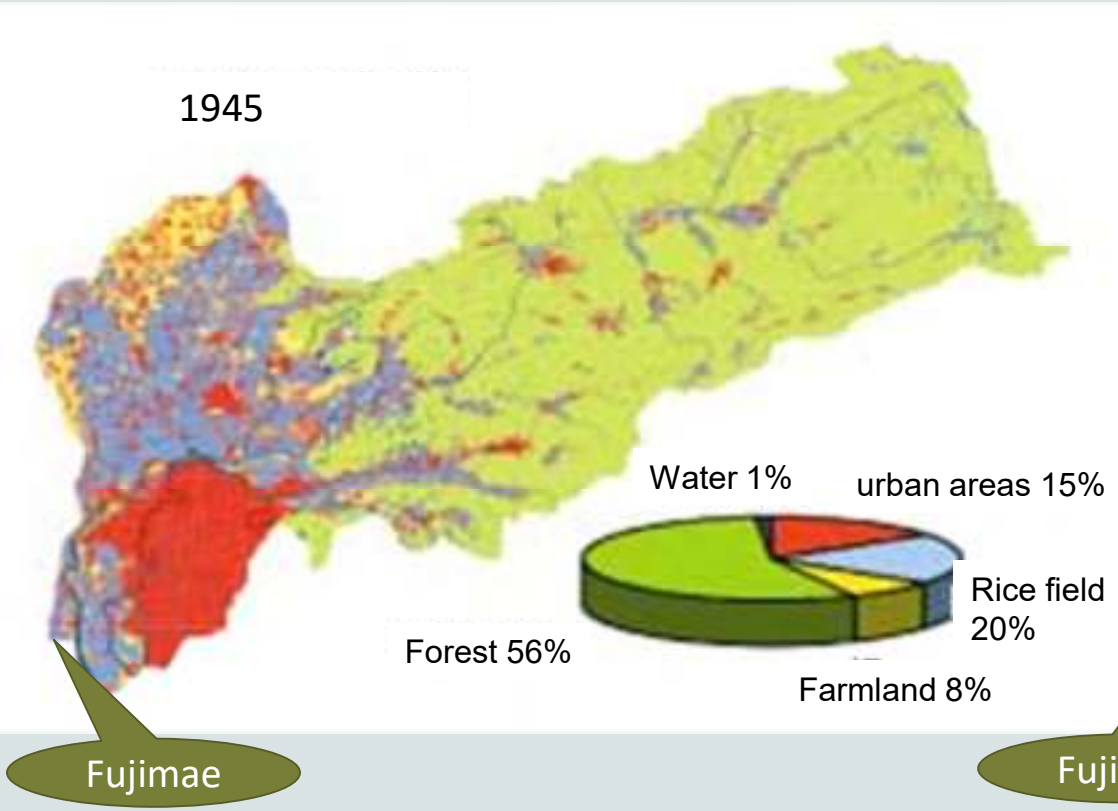


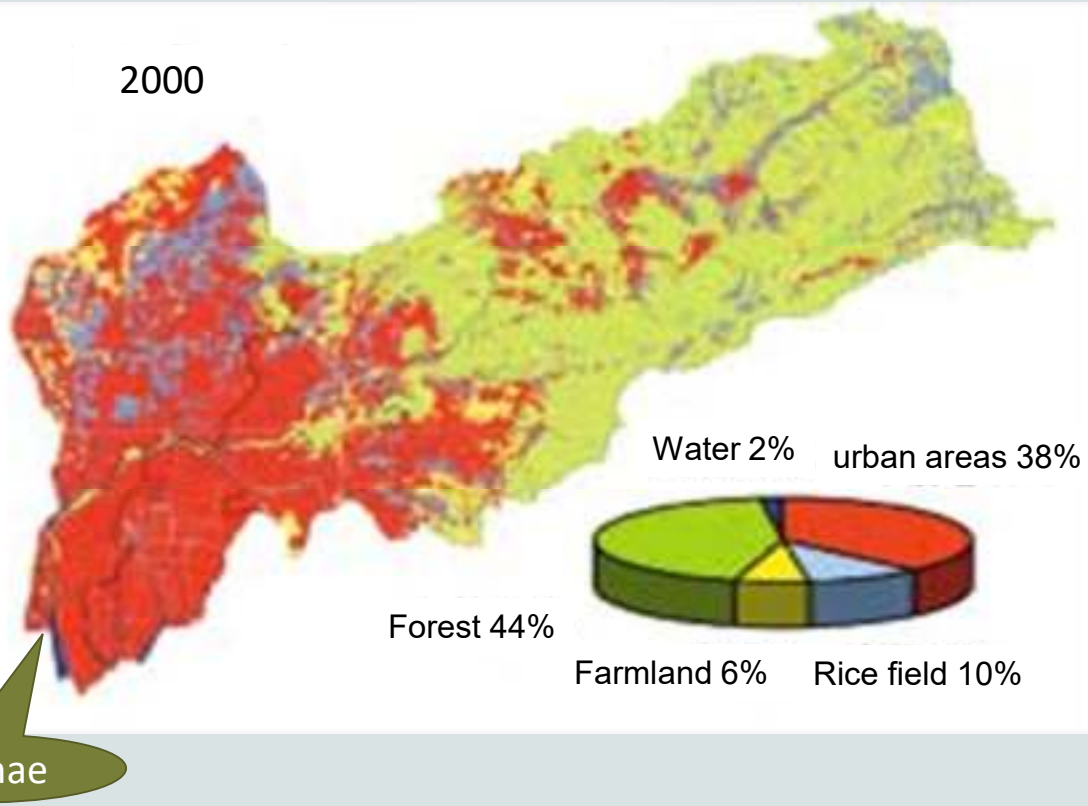


https://www.city.nagoya.jp/shisei/category/67-5-9-45-0-0-0-0-0-0.html

Land use change 1945-2000 in Shonai river watershed

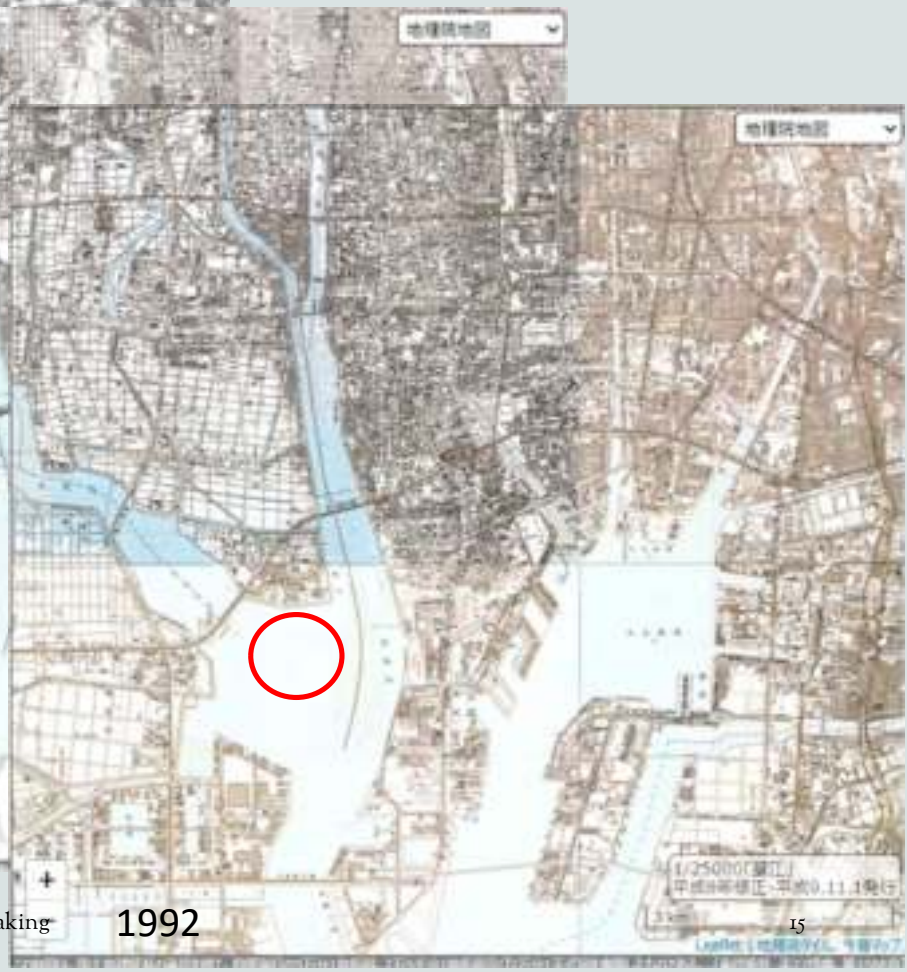
Town areas are increased from 15% to 38%.





https://www.mlit.go.jp/river/shinngikai_blog/shaseishin/kasenbunkakai/shouiinkai/kihonhoushin/050329/pdf/s2-3.pdf

Remained 5% tidal flood

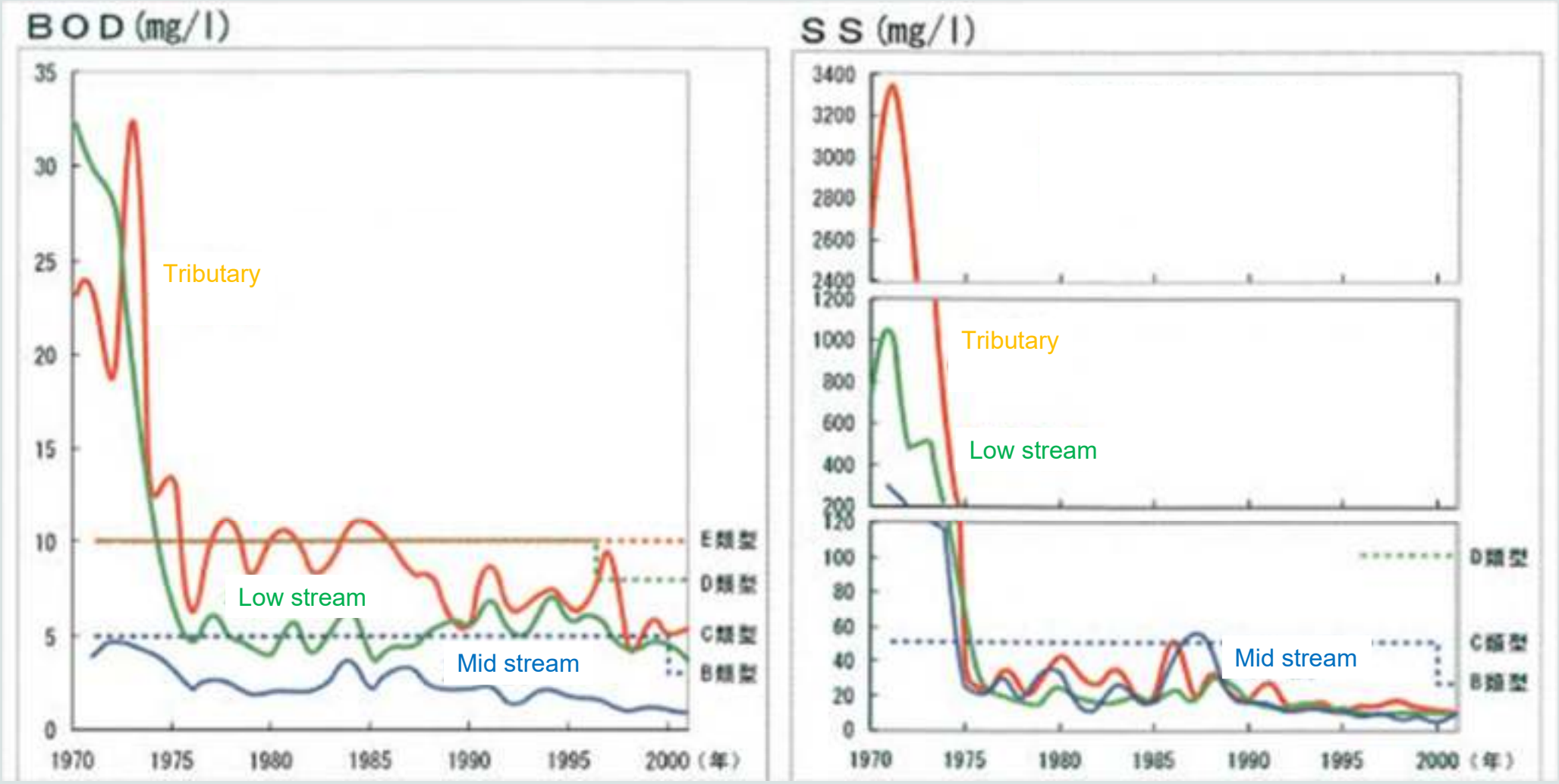


https://ktgis.net/kjmapw/index.html

Flooding risk

Year	Flood area (ha)	Affected houses (Aichi)
1957		22,428
1959		140,569
1972	574	2,347
1989	90	655
1999	11	121

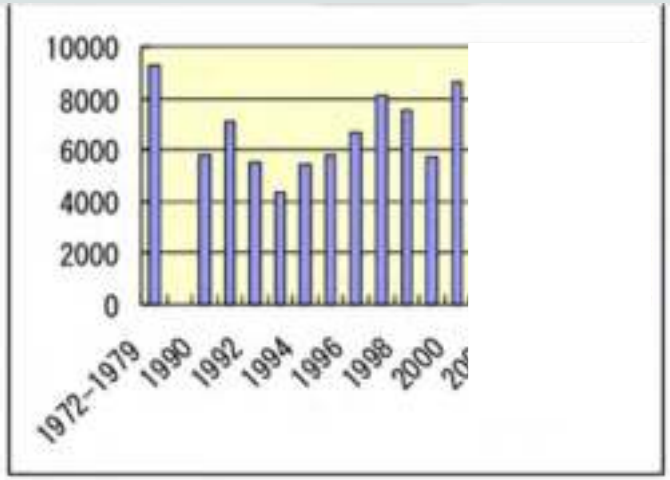
https://www.mlit.go.jp/river/shinngikai_blog/shaseishin/kasenbunkakai/shoudinkai/kinonihoushin/050329/pdf/s2-3.pdf



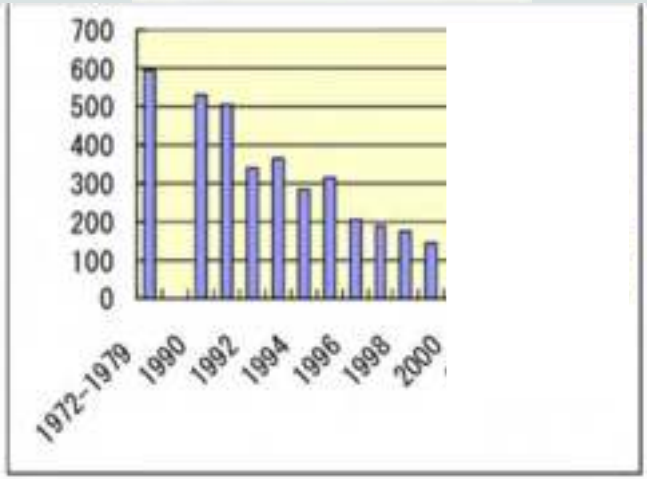
https://www.mlit.go.jp/river/shinngikai_blog/shaseishin/kasenbunkakai/shouiinkai/kihonhoushin/050329/pdf/s2-3.pdf

Change in maximum number of shorebirds and plovers

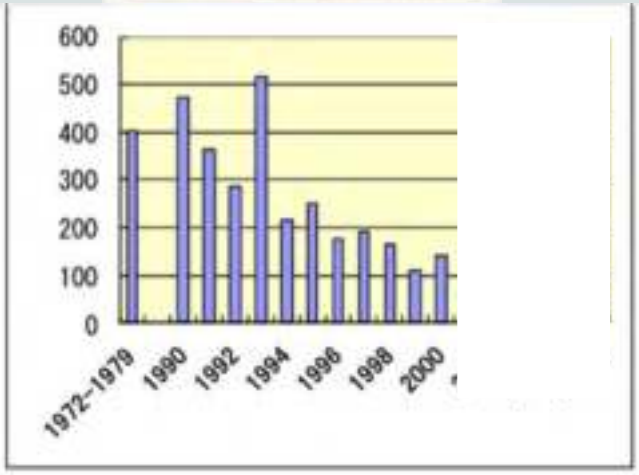
Dunlin (*Calidris alpina)*



Black-bellied plover (*Pluvialis squatarola*)

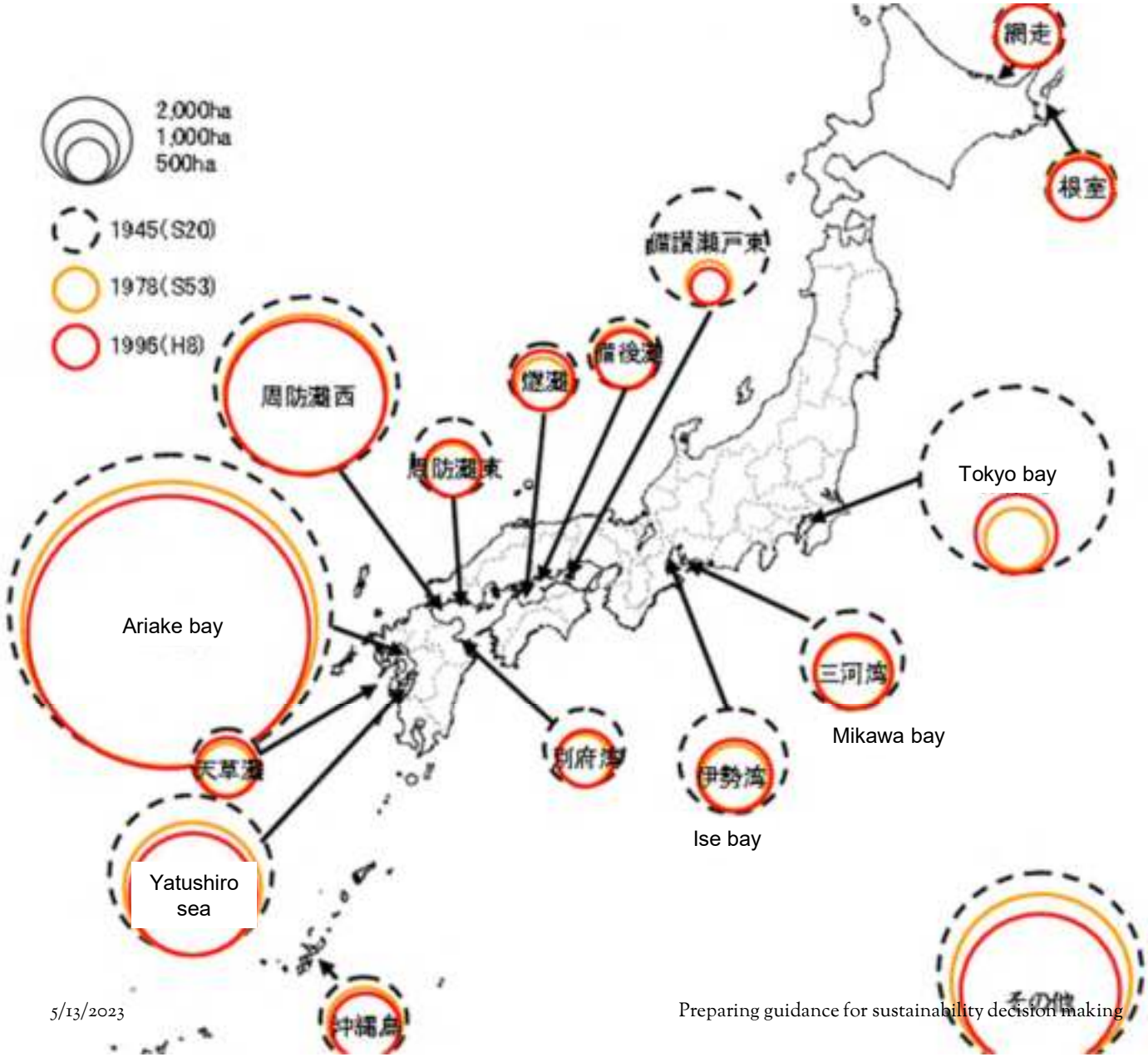


Bar-tailed Godwit (*Limosa lapponica*)



https://fujimae-higata.jp/nature.html

http://gis.chubu.ac.jp/SBW/events/16_09/kamei.pdf



Decreasing tidal flat

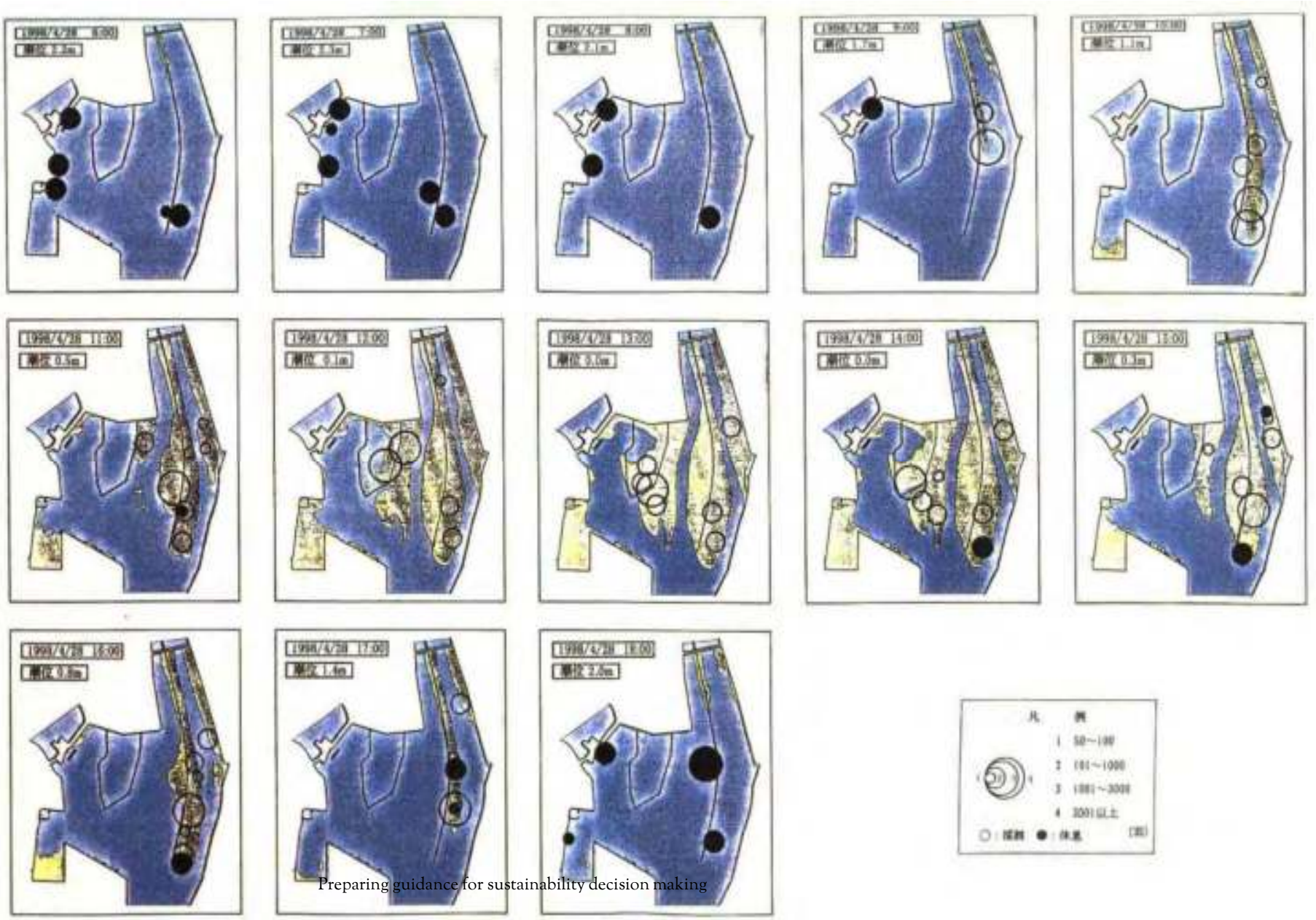
1945 - 82,621 ha

1978 - 53,856 ha

1996 - 49,380 ha

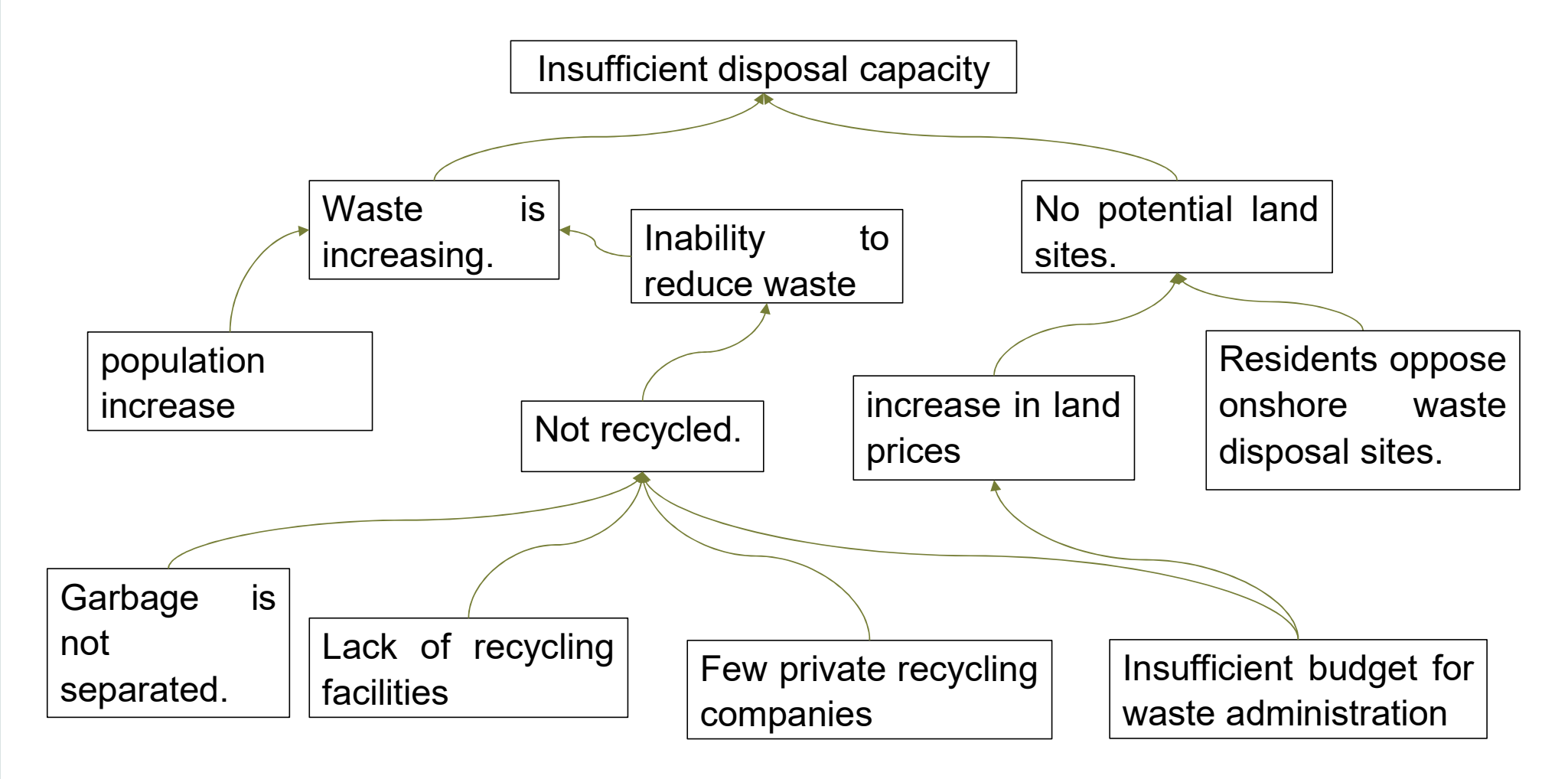
(https://www.env.go.jp/nature/koen_umi/umi02_3.pdf)

The ebb and flow of tidal flats at high tide and the distribution of shorebirds and plovers (1998/4/28)



Root-cause analysis

Created assuming SA is applied



Negative spiral

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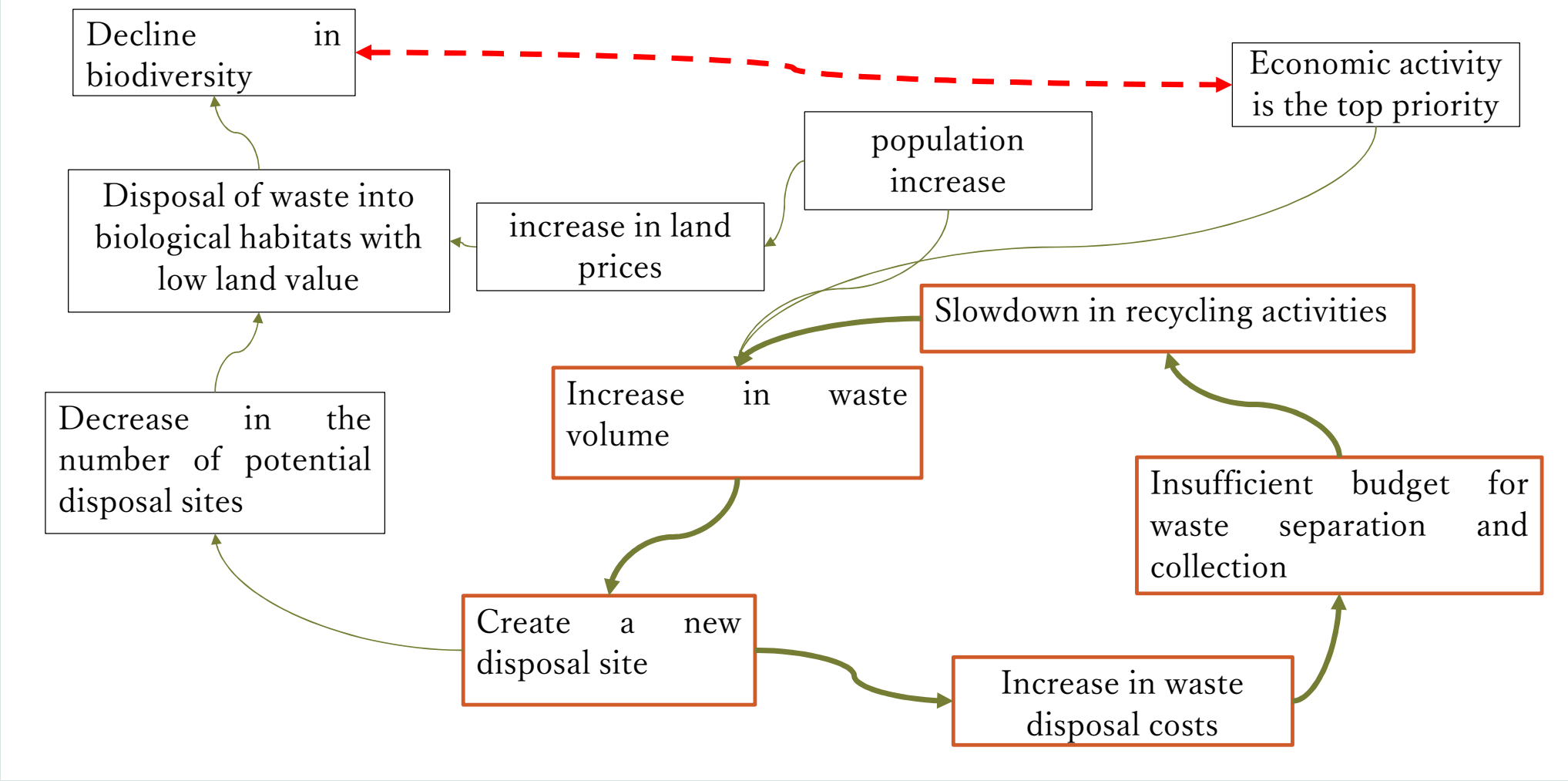


Created assuming SA is applied

Alternatives

	Original Plan	Alternative 1	Alternative 2	Alternative 3
Target	Landfill the tidal flats and turn them into a disposal site.	Fill mountain valleys to make them disposal sites.	Waste to be used as landfill for offshore airport expansion	Use current disposal site and increase recycling rate
Activities	• Construction of a weir in a marine area • Construction of a disposal site by digging in the weir • Construction of an incineration plant next to the tidal flat • Incinerate the collected combustible waste and bury the incinerated ash in the disposal site • Use the landfill as industrial land	• Construction of a disposal site with a weir at the outlet of the valley • Construction of an incineration plant next to the weir • Incinerate the collected combustible waste and bury the incinerated ash in the disposal site • Use the landfill as industrial land	• Build a weir around the airport • Establish a waste disposal site • Bring in incinerated ash for landfill • Expand the airport	• Enforce waste sorting • Sell recyclable waste to recycling companies • Incinerate non-recyclable combustibles • Bury incinerated ash in current disposal sites

Step 3 - Formulation of assessment criteria

Created assuming SA is applied

General Evaluation Criteria	SDGs	Assessment Criteria
Socio-ecological system integrity	Goal 6: Clean water and sanitation Goal 12: Responsible consumption and production Goal 14: Life below water Goal 15: Life on land	1. Are the sites selected in a way that does not impact the ecosystem? 2. Is the project Nature Positive?
Livelihood sufficiency and opportunity **Intragenerational/ Intergenerational equity**	Goal 1: No poverty Goal 2: Zero hunge Goal 3: Good health and well-being Goal 4: Quality education Goal 5: Gender equality Goal 8: Decent work and economic growth Goal 10: Reduced inequality Goal 16: Peace, justice and strong institutions	3. Is the organization involved in unfair trade that promotes poverty? 4. Does the organization provide adequate welfare for its employees, including those with disabilities? 5. Does the organization have an equal ratio of male and female employees at all ranks? 6. Is the organization committed to ethical procurement?
Waste Treatment and Disposal	Goal 9: Industry, Innovation and Infrastructure Goal 13: Climate action Goal 7: Affordable and clean energy Goal 12: Responsible consumption and production	7. Is Waste Transportation Reducing Greenhouse Gas Emissions? 8. Are waste treatment processes reducing greenhouse gas emissions? 9. Are natural resources that are expected to be depleted used in the waste treatment process? 10. Is waste sorted and recycled? 11. Is the use of renewable energy sources promoted?
risk management	Goal 11: Sustainable cities and communities Goal 13: Climate action	12. Is the proposed site in a location with a high risk of disasters such as flooding, storm surge, earthquakes, fire, etc.? 13. Are climate change adaptation measures in place?
capacity building	Goal 17: Partnership for the goals Goal 12: Responsible consumption and production	14. Is there sufficient information disclosure and communication to the public? 15. Are there partnerships with other industries such as manufacturing?

Trade-off rules

Created assuming SA is applied

	Assessment Criteria	Conflict item	Trade-off rules
Employment	《Equity》4. Does the organization provide adequate welfare for its employees, including those with disabilities?	《Economy》Generous employee and disabled welfare may lead to budget shortfalls	Benefits should not be cut because of budget shortfalls or deteriorating financial conditions
	《Equity》5. Does the organization have an equal ratio of male and female employees at all ranks?	《Economy》Increasing the percentage of women could worsen the financial situation of the Local Governments.	Do not reduce the proportion of women in the workforce because of budget shortfalls
Location	《Disaster》12. Is the proposed site in a location with a high risk of disasters such as flooding, storm surge, earthquakes, fire, etc.?	《Ecology》Places with no ecological load may increase disaster risk	Ecosystem conservation must not be sacrificed to reduce disaster risk
	《Ecology》1. Are the sites selected in a way that does not impact the ecosystem?	《Economy》Locations with no ecological impact may have higher land prices, compensation costs, and construction costs	Ecosystem conservation must not be sacrificed to reduce project costs
Design	《Poverty》3. Is the organization involved in unfair trade that promotes poverty?	《Economy》Ethical procurement may worsen the work efficiency and financial situation of Local Governments	Ethical procurement should not be avoided because of inefficient operations or budget shortfalls
	《Climate》13. Are climate change adaptation measures in place?	《Economy》Climate change adaptation may worsen the financial situation of Local Governments.	Climate change adaptation should not be avoided because of budget shortfalls
	《Ecology》2. Is the project Nature Positive?	《Economy》Nature Positive could worsen the financial situation of Local Governments	Nature Positive should not be avoided because of budget shortfalls
Operation	《Climate》7. Are climate change adaptation measures in place? 《Climate》8. Are waste treatment processes reducing greenhouse gas emissions?	《Economy》Greenhouse gas measures for waste transport and disposal may worsen work efficiency and the financial situation of local governments	Do not avoid GHG emission reductions because of budget shortfalls or inefficiencies
Resources and recycle	《Resorces》9. Are natural resources that are expected to be depleted used in the waste treatment process? 《Resorces》11. Is the use of renewable energy sources promoted? 《Recycle》10. Is waste sorted and recycled? 《Poverty》6. Is the organization committed to ethical procurement?	《Economy》Sustainable resource use, recycling, and ethical procurement can lead to worsening work efficiency and financial conditions	Do not avoid sustainable resource use, recycling, and ethical procurement because of budget shortfalls or inefficiency
Communication	《Information》14. Is there sufficient information disclosure and communication to the public? 《Partnership》15. Are there partnerships with other industries such as manufacturing?	《Economy》Excessive communication with residents hinders the operation of the facility.	Information should not be hidden, even if it may hinder operations.

Created assuming SA is applied

Selection the alternative

	Original Plan	Alternative 1	Alternative 2	Alternative 3
Target	Landfill the tidal flats and turn them into a disposal site.	Fill mountain valleys to make them disposal sites.	Waste to be used as landfill for offshore airport expansion	Increase recycling rate and review estimated landfill volume
Employment	+++	+++	+++	++
Location	- - -	- - -	++	+++
Design	- - -	- - -	++	+++
Operation	- - -	- - -	- - -	+++
Resource and recycle	- - -	- - -	- - -	+++
Communication	++	++	++	+++

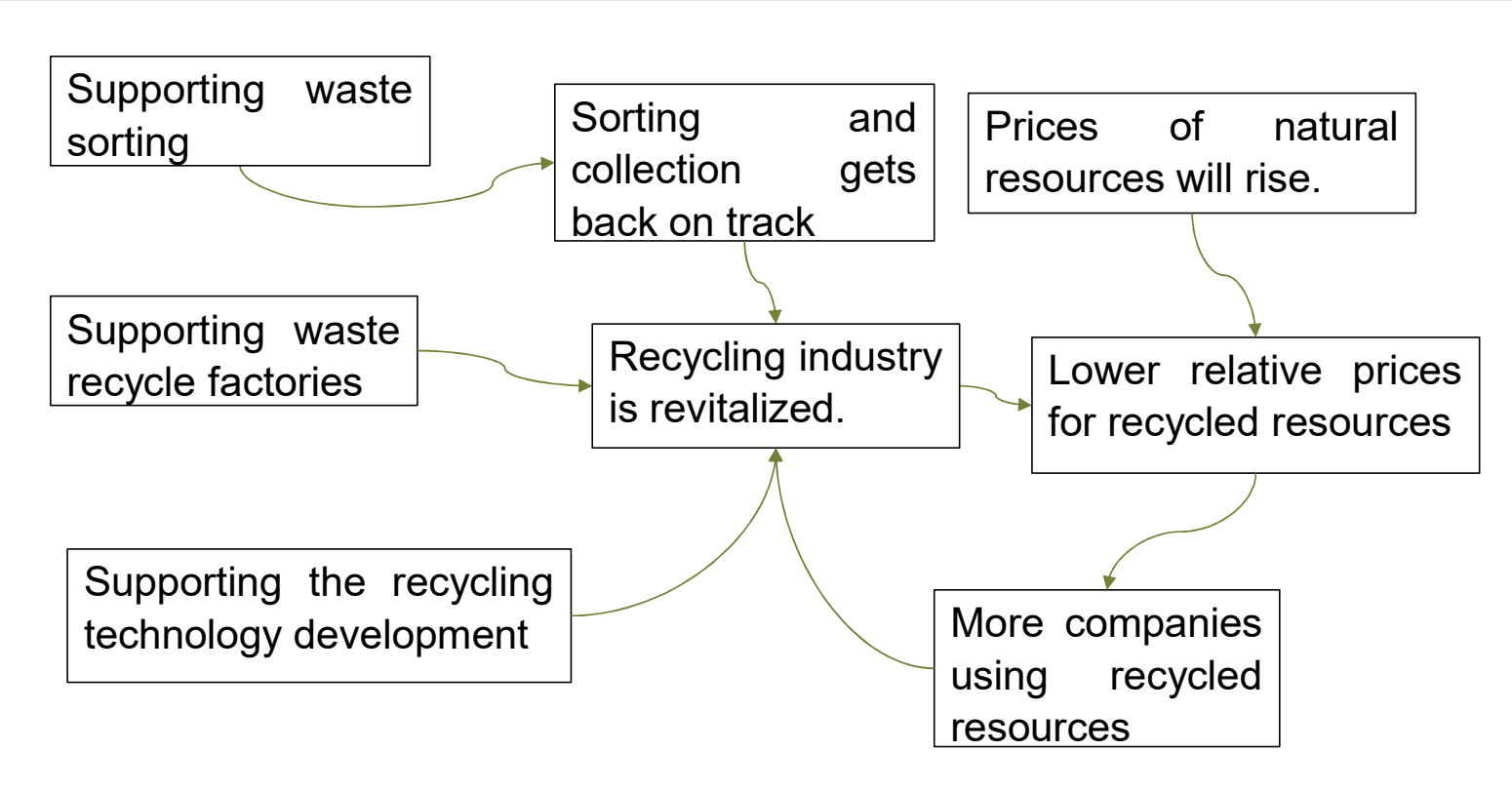
Created assuming SA is applied

Step 4 - Enhancement of alternatives

Activities	Negative impact	Mitigation
Sell recyclable waste to recycling companies	Reduced volume of citizens bringing directly to private recyclers, which may reduce profits for recyclers.	The government pays private recyclers for recyclable waste at a discount, while the government supports the introduction of new technologies by private recyclers.
Incinerate non-recyclable combustibles	Greenhouse gas emissions.	Planting to increase the amount of greenery in the city by 5% each year to promote absorption of greenhouse gases by plants
Landfill incinerated ash at a disposal site	Dust damage and water pollution from leachate may occur in the vicinity of landfill sites	A buffer zone with trees will be provided around the landfill site, and if contamination is found in the leachate, a temporary storage reservoir will be installed.

Activity	Positive impact	Enhancement
Sell recyclable waste to recycling companies	Recycling industry becomes more active	Government supports companies that use recycled resources as raw materials

Positive spiral



Step 5 - Finalization of assessment evaluation criteria and conditions for approval

	Assessment Criteria	Trade-off rules	risk management rules	Indicator	Conditions of Approval
Employment	《Equity》 4. Does the organization provide adequate welfare for its employees, including those with disabilities?	Benefits should not be cut because of budget shortfalls or deteriorating financial conditions		Hearing satisfaction rate	More than 60%
	《Equity》 5. Does the organization have an equal ratio of male and female employees at all ranks?	Do not reduce the proportion of women in the workforce because of budget shortfalls		percentage of women	More than 40%
Location	《Disaster》 12. Is the proposed site in a location with a high risk of disasters such as flooding, storm surge, earthquakes, fire, etc.?	Ecosystem conservation must not be sacrificed to reduce disaster risk	Select a location based on the assumption of damage in the event of collapse or flooding.	Risk evaluation by Hazard map	Low risk
	《Ecology》 1. Are the sites selected in a way that does not impact the ecosystem?	Ecosystem conservation must not be sacrificed to reduce project costs	Conduct biological surveys during the site selection phase.	Biological monitoring	Local ecological cores, buffers and corridors to be avoided
Design	《Poverty》 3. Is the organization involved in unfair trade that promotes poverty?	Ethical procurement should not be avoided because of inefficient operations or budget shortfalls	Carefully investigate procurement channels from the design stage.	Audit report of trading	Not being involved in unfair trade
	《Clinate》 13. Are climate change adaptation measures in place?	Climate change adaptation should not be avoided because of budget shortfalls		Environment report	Adaptation measures to be taken
	《Ecology》 2. Is the project Nature Positive?	Nature Positive should not be avoided because of budget shortfalls	Make payments to outside contractors based on results	Expanding green area	More than 10%
Operation	《Climate》 7. Are climate change adaptation measures in place? 《Climate》 8. Are waste treatment processes reducing greenhouse gas emissions?	Do not avoid GHG emission reductions because of budget shortfalls or inefficiencies	Establish relay collection points for transportation to shorten the total transportation distance. Provide support not only for sorting at the time of collection, but also for systems to recycle and reuse waste.	Greenhouse Gas Emissions reducing rate	More than 10%
Resource and recycle	《Resorces》 9. Are natural resources that are expected to be depleted used in the waste treatment process?	Do not avoid sustainable resource use, recycling, and ethical procurement because of budget shortfalls or inefficiency	Develop a target image of sustainable resource recycling and a clear strategy to move forward toward that goal.	Natural resource utilization rate	Less than 50%
	《Resorces》 11. Is the use of renewable energy sources promoted?			Renewable Energy Utilization Rate	More than 10%
	《Recycle》 10. Is waste sorted and recycled?			Recycling rate	More than 30%
	《Poverty》 6. Is the organization committed to ethical procurement?			Ethical procurement rate	More than 30%
Communication	《Information》 14. Is there sufficient information disclosure and communication to the public? 《Partnership》 15. Are there partnerships with other industries such as manufacturing?	Information should not be hidden, even if it may hinder operations.	Establish a system where the more information disclosed, the more benefits are gained.	Disclosure rate	More than 80%

Actual result of the project

1998 **EIA report** is submitted.

1998 Application for **Reclamation of publicly owned water surface** is filed.

1999 Mayor of Nagoya City announced **abandonment of the project**.

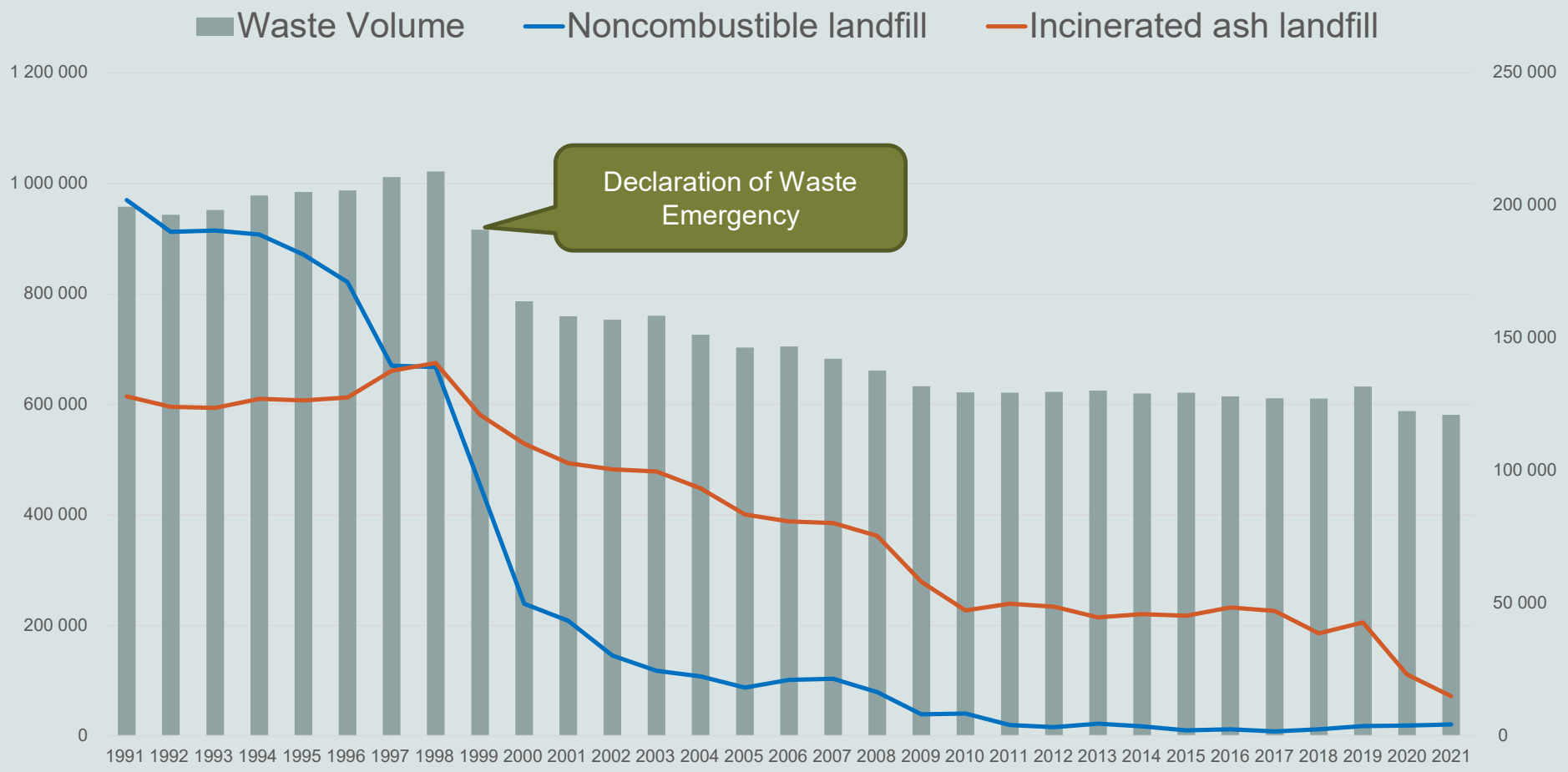
1999 Mayor of Nagoya City announced **Declaration of Waste Emergency**.

(https://www.jichiro.gr.jp/jichiken_kako/report/rep_yamagata28/jichiken_hokoku/kankyo09/kankyo09.htm)

NGO, IAIA and Ministry of Environment Japan played an important role.

New Rules for Sorting Garbage in Nagoya

Decreasing waste



https://www.city.nagoya.jp/shisei/category/67-5-9-45-0-0-0-0-0-0.html

Ramsar Sites Information Service

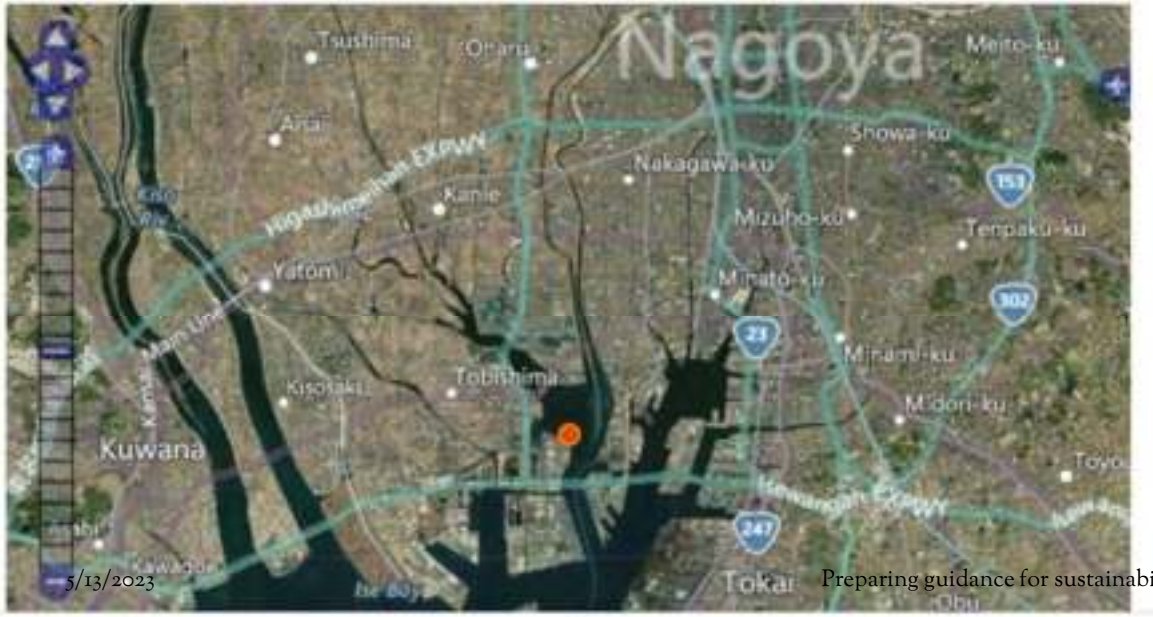
2,492 Sites covering 256,637,774 ha

Log in EN FR

ABOUT EXPLORE SITES MANAGE MY SI

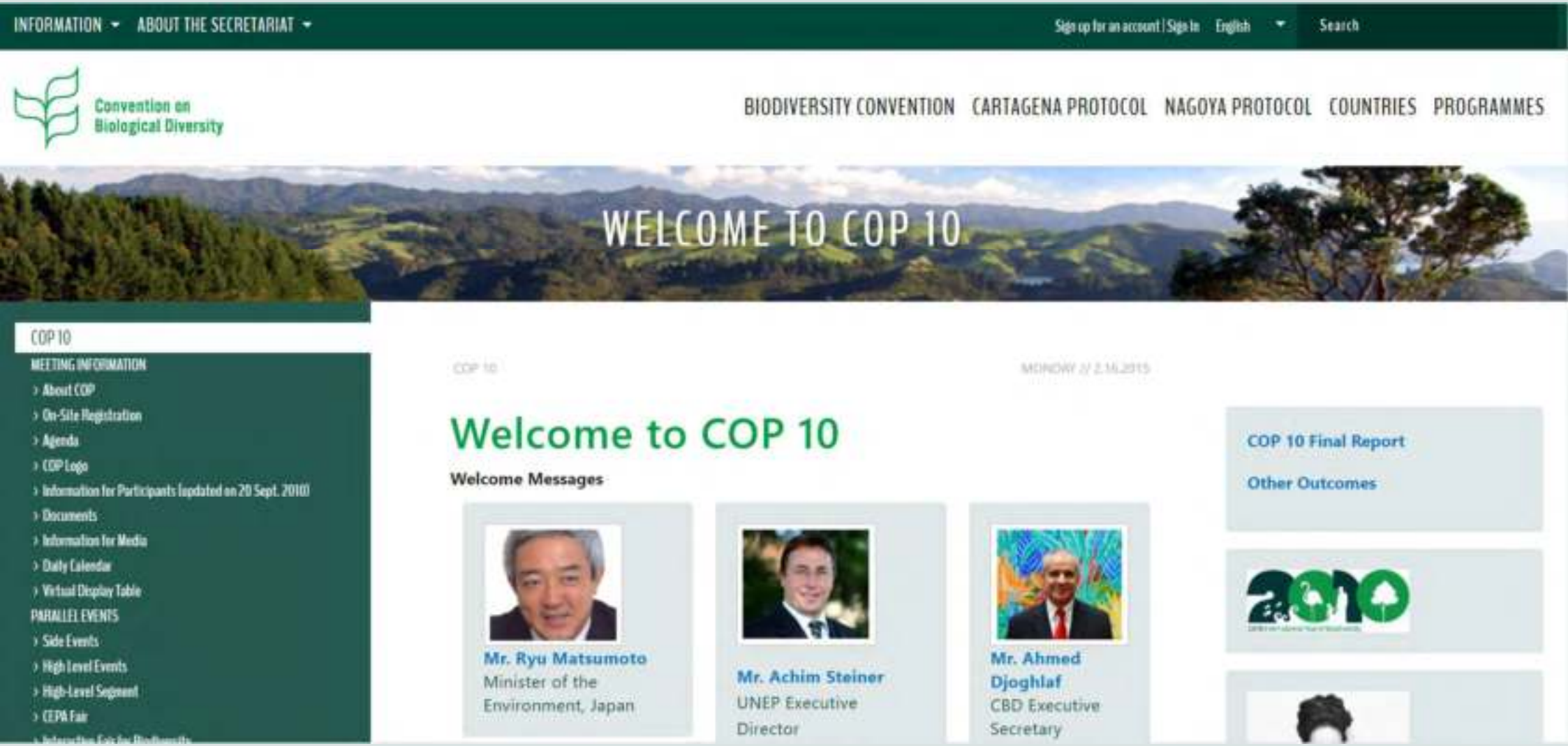
Fujimae-Higata

Country:	Japan
Site number:	1200
Area:	323 ha
Designation date:	18-11-2002
Coordinates:	35°04'N 136°49'E



Overview Downloads

Fujimae-Higata. 14/10/02; Aichi; 323 ha; 35°04'N 136°50'E. A tidal flat at the mouths of the Shonai, Shinkawa, and Nikko rivers as they flow into the port city of Nagoya. The site is an important staging site along the East Asia-Australia Flyway with one of the highest shorebird counts in Japan - some seven species of shorebird surpass the 1% threshold in the area, and more than 20,000 waterbirds have been counted frequently. The wetland is also visited by a number of endangered species, including the birds Tringa guttifer, Botaurus stellaris stellaris, Tadorna tadorna, and Sterna albifrons sinensis, among others, and the endangered fish Chaenogobius macrognathos. Once part of extensive tidal flats in the northern part of Ise Bay, the site remains relatively unaltered itself amid widespread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COP Logo
Information for Participants (updated on 20 Sept. 2010)
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Information for Media
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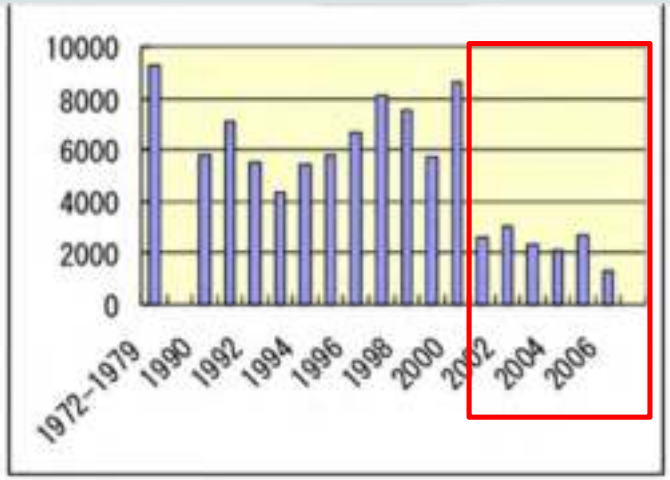
PARALLEL EVENTS
Side Events
High Level Events
High-Level Segment
CEPA Fair
Welcome to COP 10
Welcome Messages
Mr. Ryu Matsumoto
Minister of the Environment, Japan
Mr. Achim Steiner
UNEP Executive Director
Mr. Ahmed Djoghlaf
CBD Executive Secretary
COP 10 Final Report
Other Outcomes

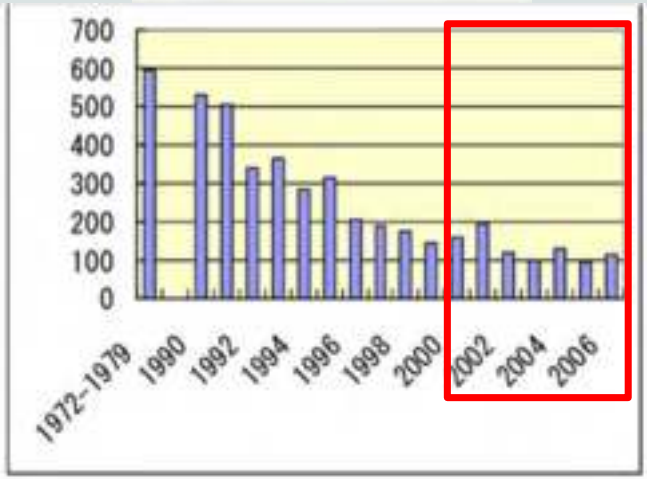
Step 6: Monitoring and feed back

Only stopping one project cannot preserve tidal ecosystem

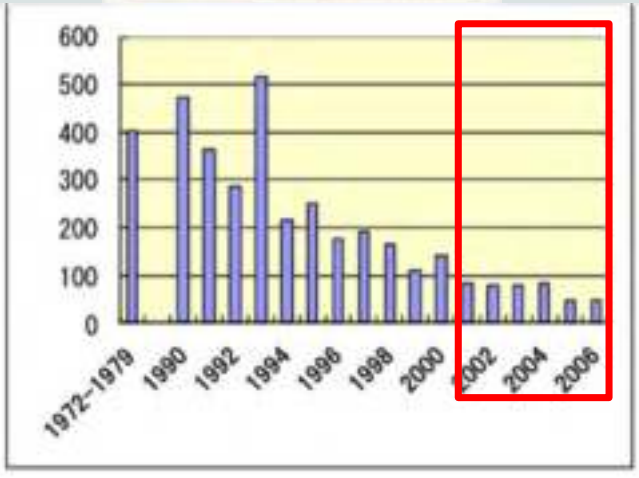
Dunlin (*Calidris alpina)*



Black-bellied plover (*Pluvialis squatarola*)



Bar-tailed Godwit (*Limosa lapponica*)



https://fujimae-higata.jp/nature.html

http://gis.chubu.ac.jp/SBW/events/16_09/kamei.pdf

Important points

- Point 1: Face the negative consequences caused by one's past actions
- Point 2: Recognize what was sacrificed and what was prioritized
- Point 3: Do not stick to direct negative impact used in EIA
- Point 4: Keep explore the alternative which clear all conditions
- Point 5: Use a Positive spiral with psychological devices

Can we lead?

Evaluated biological data ➔ Raw data

Project base data ➔ Area base census

Monitoring report ➔ Spatial information database

Consultant ➔ Citizen

Thank you

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