

SATOAYAMA BANK: THE FIRST CASE OF BIODIVERSITY BANK ESTABLISHMENT IN JAPAN

Takafumi Kawamura, Akira Tanaka
Tokyo City University
Japan



1. Background and Purpose

- **Biodiversity offsetting** is way to achieve **No-Net Loss**
- Aggregated Biodiversity offsetting system is called **biodiversity banking**
- Biodiversity Offsetting has been mandated in over 50 countries (Tanaka and Otaguro, 2010)
- Biodiversity Offsetting is **not mandated in Japan**
- **Tsubaki TC Satoyama Bank**(the first biodiversity bank) was established
- Previous NNL studies demonstrate with **hypothetical**
- Tsubaki TC Satoyama Bank and a public company **try biodiversity offset**



Discovered challenges of No-Net Loss through **actual case**

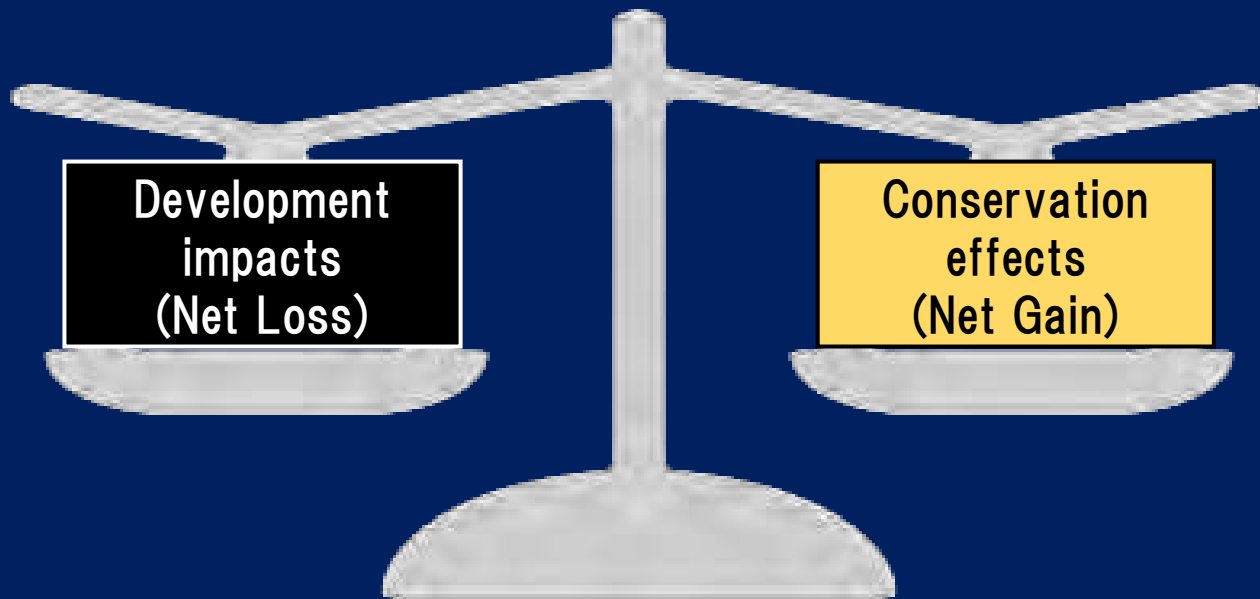
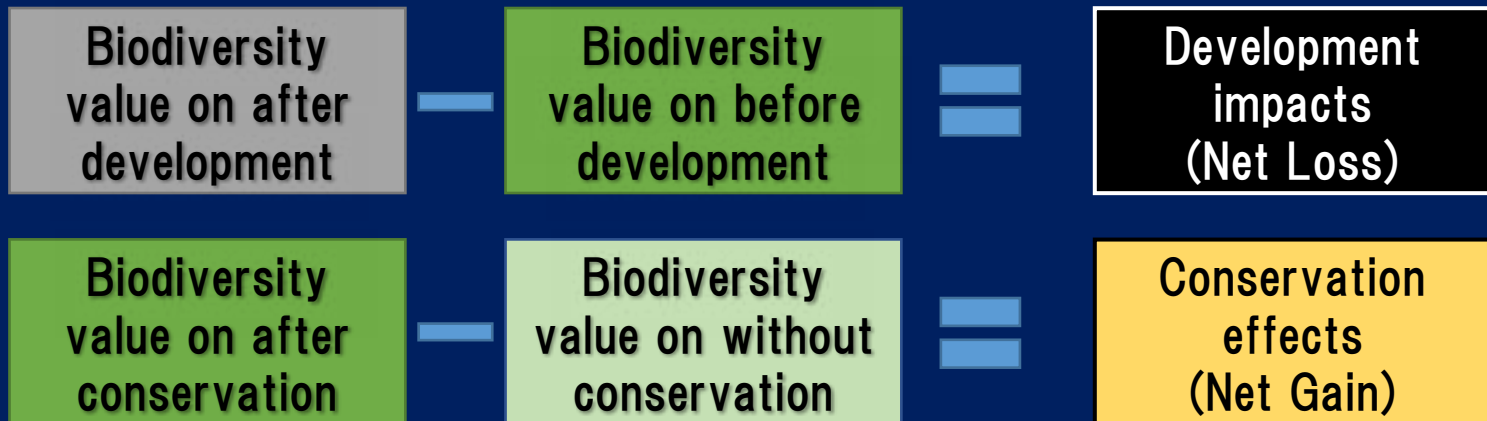


Fig. Concept of NNL

2. Method

2.1. Organizing information of biodiversity offsetting project

- Development project and its impacts (Net Loss)
- Conservation project and its effects (Net Gain)

Vegetation analysis, endangered species analysis, interviews with bank owners and developers

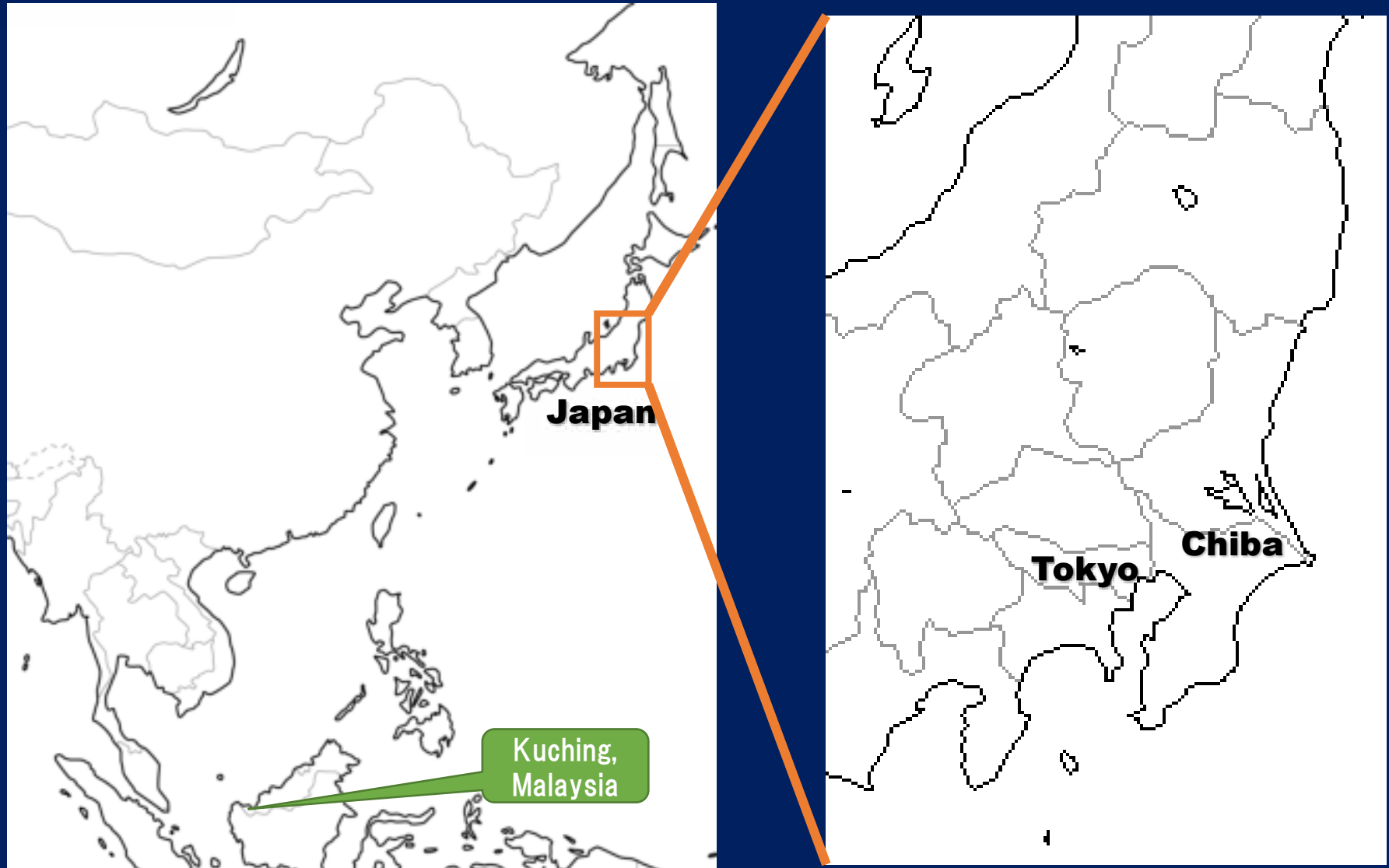
2.2. No-Net-Loss calculation

- Definition of NNL on biodiversity offsetting
- Trial calculation of areas to achieve NNL

2.3. Discussion on this study

3. Results

3.1. Organizing information of biodiversity offsetting project



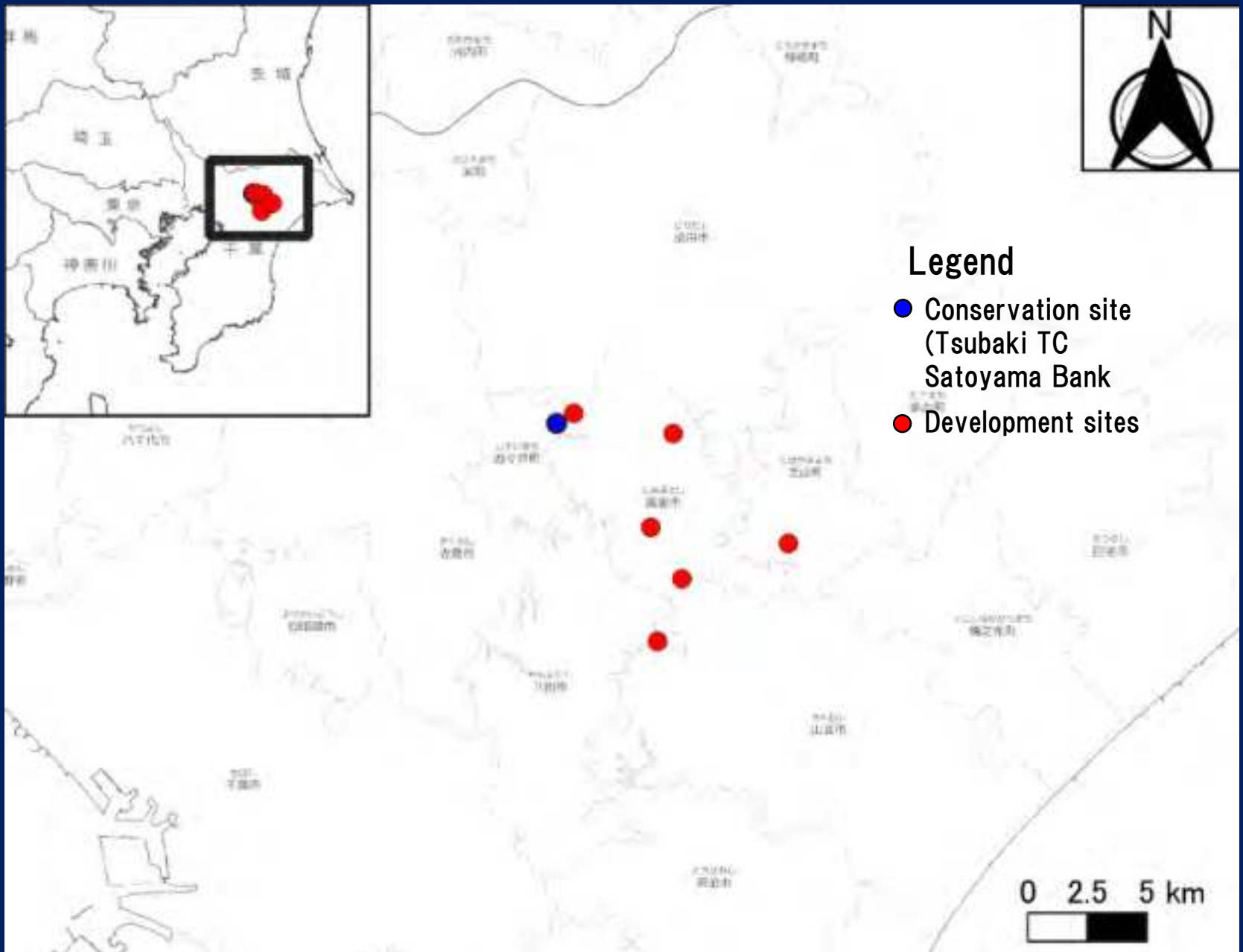


Fig.: Location of development sites and conservation site

**About Net Loss
on this project**

About development impacts

Project type: Photovoltaic Power Generation

Location: 6 plants, Northern Chiba

Total Output: 3MW

Total Area: 7.1ha

Main former land use : Pine forest, Farmland



Photo: Development site

**About Net Gain
on this project**



Photo: 43 ha of congruous Satoyama ecosystems are protected



Photo: *Quercus serrata* forest



Photo: *Cryptomeria japonica* forest



Photo: Paddy field

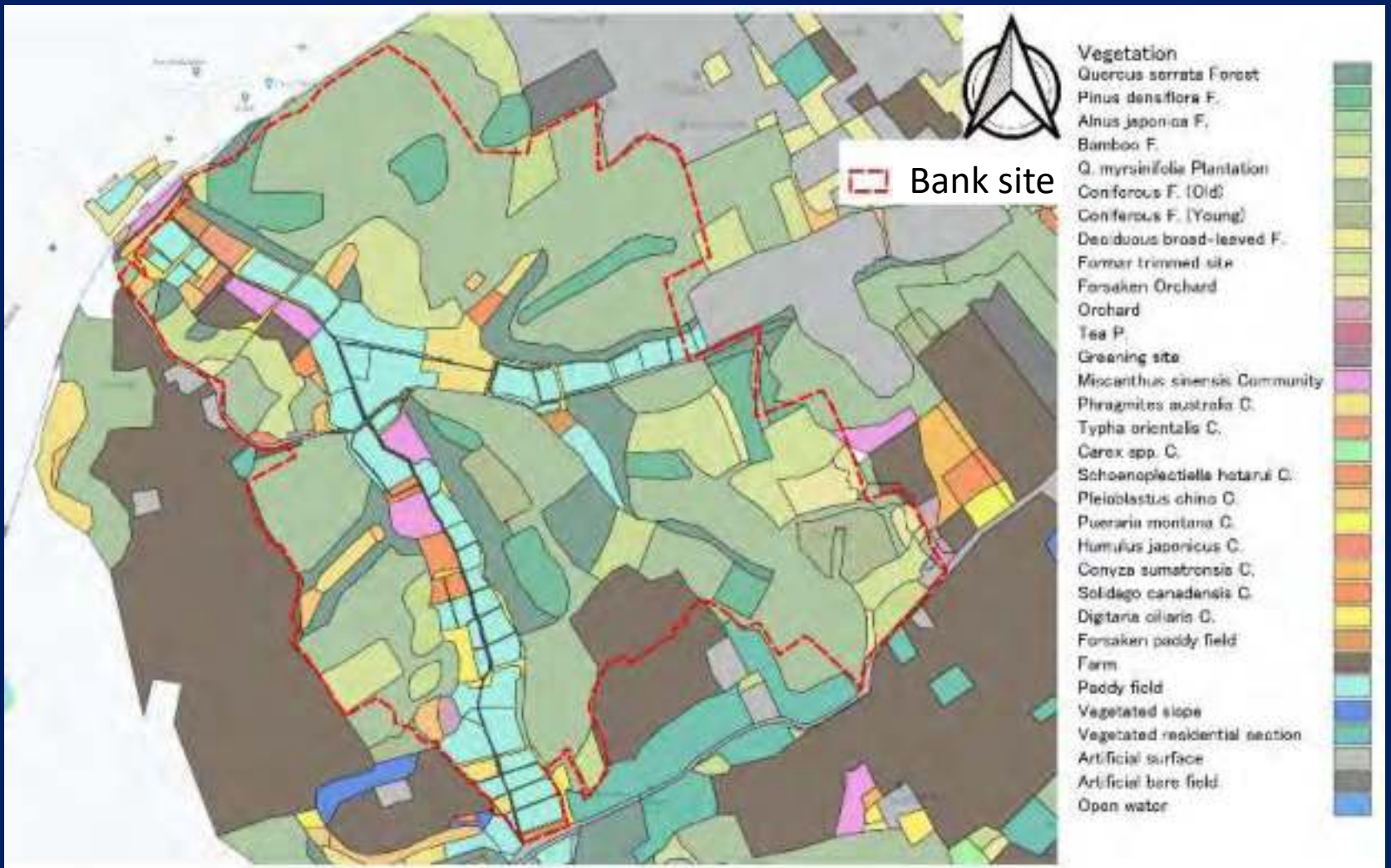


Fig.: Vegetation map of Tsubaki TC Satoyama Bank

About conservation effects

Location: Ijino, Ijino-shinden, Imakura-shinden, Shisui town, Chiba Pref.

Area: 42.8ha

Mainly Land use: *Cryptomeria japonica* forest, *Quercus serrata* forest, Paddy field

Endangered species: *Crematis patens*, *Neozephyrus japonicus*, *Cynops pyrrhogaster*, *Butastur indicus* etc.

Management activities : Maintenance of route, forest type conversion



Clematis patens



Neozephyrus japonicus



Cynops pyrrhogaster



Butastur indicus

3.2. Result of NNL Calculation

Table: Results of organizing Definition of NNL

Type	Case	Definition of NNL
(1) Area only	CSR reports (Miyazaki and Momii, 2009)	Development area= Conservation Area
(2) Area x Quality	Habitat Hectare Method City development in Yamanashi Pref.	Score of Development area= Score of Conservation Area
(3) Area x Quality x Time	HEP(Habitat Evaluation Procedure) City development in Yokohama City	Score of Development area= Score of Conservation Area



NNL has **various definitions**

Table: NNL Calculation results on this project

Calculation type	Net Loss	Net Gain	Area needed to achieve NNL
(1) Area only	7.1ha	7.1ha	7.1ha
(2) Area x Quality	426,505 pts	1,714,955 pts	10.6ha
(3) Area x Quality x Time	8,530,104 pts	19,644,028 pts	18.6ha



NNL has various goals

Conclusion

1. There are three perspectives: **Area, Quality** and **Time**
2. “**Area**” is a settle scale
3. “**Quality**” has various scales
4. “**Time**” has various scales



NNL has **various definition and goals**



NNL has various definition and goals even for **individual offsetting project**

Future implication

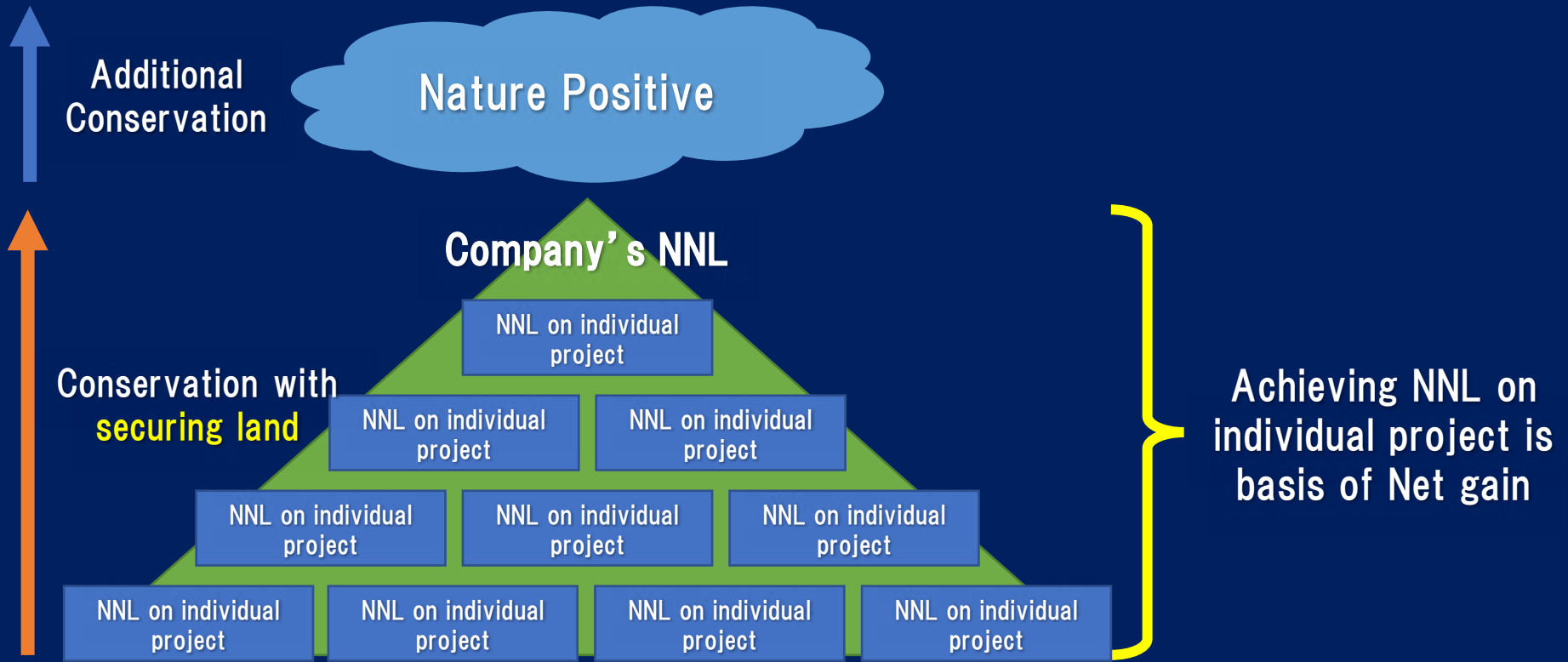


Fig.: NNL is basis of Nature Positive



The first step in Nature Positive is **securing land** and **achieving NNL** in individual development project

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Thank you