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# Planning for the Global Urban Agenda

## Shaping Ecodistricts in Tokyo suburbs

*C. Cassatella, A. Murayama (editors)*

Editors: Claudia Cassatella and Akito Murayama

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The On-Site Workshop "Planning for the Global Urban Agenda. Shaping Ecodistricts in Tokyo Suburbs" (March 2018) was organized in collaboration with the Nishi-Tokyo City Urban Planning Committee. Department of Urban Engineering, School of Engineering, UTokyo devoted the Urban Project Studio to such topic, and then shared preparatory materials and outcomes.
The School of Planning and Design of the DIST Inter-University Department of Urban and Regional Studies and Planning of the Politecnico di Torino supported the PoliTO students' participation, on the occasion of the launch of the "Planning for the Global Urban Agenda" Curriculum of the MSc in Territorial, Urban, Environmental and Landscape Planning.
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# Planning for the Global Urban Agenda

## Shaping Ecodistricts in Tokyo suburbs

*C. Cassatella, A. Murayama (editors)*

# FOREWORDS

***Politecnico di Torino***

With a history of over 150 years, Politecnico di Torino was the first Italian technical school founded on the wave of the scientific innovation that gave rise to the most prestigious polytechnic schools in Europe in the mid-19 century. This long history has turned Politecnico di Torino into one of the top twenty European technical universities for education and research in Engineering and Architecture, with 33.000 students and a teaching staff of more than 900.

In 2017, The School of Planning and Design of the Politecnico di Torino (of the DIST Inter-University Department of Urban and Regional Studies and Planning) launched a new Curriculum, completely taught in English: "Planning for the Global Urban Agenda". Since its establishment in 2001, the Master of Science in "Territorial, Urban, Environmental and Landscape Planning", within which the new Curriculum has been created, is one of the most prominent place for training planners in Italy, attracting around 60 students a year. The MSC is characterized by international exchanges, lectures by visiting professors, students' outgoing and incoming mobility, and specific agreements with Schools in and outside Europe.

A curriculum in English language might certainly increase the opportunities of such exchanges, but internationalization is not simply a matter of language. It means dealing with different cultures, places, practices, and – coming to planning issues – institutional and legislative frameworks. Identifying which are the challenges, which paradigms, methods and solutions can be transferred and which one cannot.

The United Nations' New Urban Agenda gave us an inspiration and, at the same time, a shared topic for starting conversation with other schools all around the globe. The collaboration with the University of Tokyo happily came in this moment. In fact, in the framework of a Joint Project for the Internationalization of the Research, "UNI-NUA - Implementing the United Nations' New Urban Agenda. Universities in action", a joint on-site workshop for graduate students, also involving PhD students and young researchers, has been organized. The Joint Workshop allowed for an interesting comparison of approaches, applied on a case study, and, thanks to the University of Tokyo, the experience offered stimuli and interactions with the reality of a complex urban system.

Furthermore, the Joint Workshop allowed an intersection among research and teaching, practical experiences, creativity, and an international atmosphere that are all ingredients that our School, and Politecnico di Torino in general, is more than keen to provide for its students also in the coming years.

*C. Cassatella*

## *The University of Tokyo*

Department of Urban Engineering, School of Engineering, the University of Tokyo was established in 1962 to respond to various urban issues associated with rapid urban growth. Now the issues are changing as we entered the post-growth era. Around 120 undergraduate and 170 graduate students, including 50 foreign students, are currently enrolled in the two programs of urban planning and environmental engineering. Research topics in the Urban Planning Course include urban land use, landscape, community development, urban design, territorial design, spatial design, urban transportation, housing and urban analysis, urban information and safety system, and international development and regional planning. 17 professors are affiliated with the course.

Education in the Urban Planning Course aims to train students as physical planners with comprehensive knowledge and abilities in various engineering fields. Intensive studio works are provided where students learn how to plan and design sites, communities, cities and regions. Students are expected to obtain the abilities of recognizing (urban survey), analyzing (urban analysis and evaluations), envisioning (envision the future of cities) and creating (spatial planning and design).

Urban Project Studio 2017 for graduate students focused on the three distinct areas in Tokyo. Nishi-Tokyo City, a suburban municipality, contains "sprawled" urban areas with a mix of agricultural and residential land uses supported by minimum urban infrastructure. This kind of "urban sprawl" was considered as a failure of urban planning. However, the perception seems to be changing now shedding light on the positive side. Accordingly, we conducted a studio, with a support of Nishi-Tokyo City, to explore planning, design and system to shape low-impact ecodistricts by promoting appropriate development while conserving urban farmlands. The studio which started in October was supervised by Associate Prof. Akito Murayama and Assistant Prof. Akiko Iida with a support of Dr. Kaoru Matsuo and Dr. Takahiro Yamazaki. In parallel to the studio, we had a great opportunity to work with students and professors at Politecnico di Torino through web seminars and students' presentations. We were also delighted to have Associate Prof. Giancarlo Cotella supervise the studio with us for four weeks during his stay in Tokyo in November/December 2017.

On-site workshop in March was an intensive workshop where graduate students and professors from the two universities joined to further develop the proposals for Nishi-Tokyo. It was also a great pleasure to have Profs. Claudia Cassatella, Marco Santangelo and Giancarlo Cotella in the evening seminar on "Policies and Planning for Shrinking Cities: Learning from Torino, Italy". The seminar was a success with the participation of around 100 interested professionals and students.

The collaboration with Politecnico di Torino surely enhanced the globalization of our research and education within the common concept of implementing the New Urban Agenda. I would like to express my gratitude to all who were involved.

*A. Murayama*

*The street coming from Tanashi Station and entering into the urban heterogeneous and fragmented texture of Nishi-Tokyo.*

*(photo: G. Greco, 2018)*

*Sight of the several tree nurseries in the southern district of Nishi-Tokyo City: Mukoudai-cho.*

*(photo: A. Murayama, 2017)*

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Rural areas (PGZ), Sumiyoshi-cho.
*(photo: A. Murayama, 2017)*

Rural areas (PGZ), Sumyioshi-cho.
*(photo: A. Murayama, 2017)*

Tree nursery, Mukoudai-cho.
*(photo: A. Murayama, 2017)*

***Planning for the Global Urban Agenda***

# Global metropolitan geographies: policy mobility and local challenges

*M. Santangelo*

One of the meanings of what we did, as a group of Italian students and professors in Nishi-Tokyo City, is related to a comparative gesture, based on the (f)act of positioning oneself in a context. We were looking at the Nishi-Tokyo area as 'newcomers' while getting information from our Japanese counterparts and this, if not an explicit objective, has certainly brought an implicit level of comparison between different realities: how the urban fabric was similar or different from what previously experienced; which theoretical and methodological tools we were ready to use in operating in such a context; how our skills and background would have interacted with those of Japanese professors and students involved in the Joint Workshop; how many misunderstandings would have been possible and, at the same time, how many fertile exchanges would have enriched the debates and the result of our common work. Furthermore, we were looking at the case of Nishi-Tokyo City also with the full awareness that issues and challenges, especially regarding urban sprawl and green areas preservation, were common in many other contexts, including ours. We were, thus, dealing with global metropolitan geographies: comparing cities, comparing cultures, comparing parts of the same city that may have different features (e.g. central and peripheral parts), etc.

What does it mean to compare cities and urbanization processes? How does it impact the way in which we plan and design in cities? A comparative approach may derive from the need to universalize the understanding of the urbanization process across the globe: there is an aim at deriving universal "rules" to be applied everywhere, and this comes up beside the aim of finding specificities that may differentiate one place from another. In many ways, we may distinguish between a more competitive or more generative typology of comparison, because "[c]omparison begins with ambition to test, and to change, theoretical propositions" (Robinson, 2016, p. 193). But a competitive comparison is influenced by a developmental vision. The ultimate goal is to achieve development, and what has to be universalized are also actions and policies, while a generative approach refers to the possibility of "being open to ideas from elsewhere, while attending to the locatedness of all conceptualization" (ibid., p. 188). There is a universal/specific dichotomy in globalization – as well as in globalizing urbanization processes – that calls for more attention both in analysing, imagining and designing the transformation of a city or part of it.

The reference to global phenomena, in this case urbanization, is of crucial importance here, since we were working taking into account a comparative gesture and – at the same time – knowing that urbanization has become a worldwide phenomenon because of its sheer dimension: population in cities is growing everywhere, and where cities are shrinking it is not because urbanization is reversing its effects, rather its changing its spatial configurations. It is possible, in fact, to think of a planetary urbanization, meaning, "paradoxically, that even spaces that lie well beyond the traditional city cores and suburban peripheries […] have become integral parts of the worldwide urban fabric" (Brenner, Schmid,

2012, p. 12). For the sake of our fieldwork, we had to ask ourselves: how global is the urbanization we will analyse? What can be ascribed to a planetary phenomenon and to broader influences (e.g. in terms of lifestyle)? What is, instead, expression of a rootedness, a local specificity (e.g. in terms of public-private spaces relationship)?

To answer these questions, and since we were dealing with an area of urban sprawl, we also had to consider which territorial level was the "best" to look at in order to better understand our case study area. Was it the administrative area of Nishi-Tokyo municipality? Was the metropolitan level (i.e. the whole Tokyo metropolitan area) useful for our analysis? Was it better to consider a bit of both or an area in between?

We were dealing with something that would not be described neither as an inner city nor an open countryside. An urbanised area that could not be understood within the administrative boundaries of a single city but, at the same time, it would have been pointless to analyse the whole wider region. This is not just a doubt related to the degree of density of the built environment or of the population, or of characteristics of the urban fabric within and outside a "central area". It is rather related to "[a]n (idealized) notion of an era when places were (supposedly) inhabited by coherent and homogeneous communities [that] is set against the current fragmentation and disruption" (Massey, 1994, p. 146). We know, or maybe assume, that urbanization has some global, universal, features but we also know that there are specificities to each urbanization process in itself: diversity and sameness coexist. "Diversity" is what we can understand as related to the above-mentioned "locatedness" and "rootedness". Local has always been part of the traditional understanding of space by geographers, planners, and architects: it is the level of face-to-face relationships, of direct experiences, of daily routines, of communities' self-recognition, of everyone's spatial identification. In the same time, however, those relationships, routines, experiences are localized and stretched out, intersected, "planned" at different and coexisting levels. It would be naïve to look at the local level by looking just at the space of the most common daily activities, since there is also a degree of "sameness" that mainly refers to what looks like it is happening everywhere. In diverse, variegated, situations there are, in fact, ideas and concepts that seem to be the same everywhere and that, often, turn into policies and practices. Examples of such policies and practices refer, for instance, to the definition of smart, eco-, sustainable, creative, or vibrant cities. We can also see food strategies developed in many cities around the world, as well waterfront development projects. These are just examples that refer to spaces, practices, models that travel around the world and that may "render anachronistic the notion of independent, 'domestic' decision-making" (Peck, 2011, p. 774 ).

So, again, our joint workshop had to consider both the specificities of Nishi-Tokyo City as a Japanese urbanized area and, at the same time, the global dimension of the challenges ahead: global because similar to what is happening elsewhere, and global because influenced by ideas and models developed elsewhere. We were dealing with global metropolitan geographies, that may include travelling policies and rootedness, and the results of the Joint Workshop that we present in this volume are representatives of the efforts we were confronted with, as well as examples of the attention that international students had for what makes of a space a place, including its diversity and sameness.

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# Territorial governance and spatial planning systems: an institutionalist perspective

*G. Cotella*

Among its objectives, the United Nations' New Urban Agenda aims at "reinvigorating long-term and integrated urban and territorial planning […] in order to optimize the spatial dimension of the urban form and deliver the positive outcomes of urbanization" (United Nations, 2017, p.8). Such aim acknowledges the fact that social and economic activities needs space to unfold and only through the arrangement of space can be addressed effectively. This assumption explains why the origin of spatial planning and, more broadly, of territorial governance, is to be tracked back to the origin of the first human communities. As time went by, such activity consolidated and further institutionalised until its present form, that is a direct consequence of the establishment of modern states. The result of this complex process of institutionalization is that each country in the world features a set of territorial governance and spatial planning activities and processes that occur within frameworks of legally established objectives, tools, and procedures which usually derive from the main constitutional documents. In this light, it is possible to define territorial governance and spatial planning systems (ESPON & TU Delft, forthcoming) as institutions that allow and rule, in various ways in all countries and regions of the world, involving multiple and complex processes of vertical (between policy levels) and horizontal (between policy sectors and between public and private subjects) the interactions addressing the spatial organization of social life (Janin Rivolin, 2012). The word 'institutions' refers here to 'sets of basic rules of conduct, acknowledged by a community', which can 'ensure a pattern-coordination among individual actions' and become 'a fund of knowledge accrued over the centuries, and available to all' (Moroni, 2010, p.277); they are 'artificial phenomena' occurring 'by convention' as 'the unintentional result of the interplay among intentional decisions and actions' (Moroni, 2010, pp.282–283). As the social rule concerning the rights to land ownership is an institution derived from 'conventions' acquired along the course of history, conventions of similar nature have later conferred to public authorities the task of assigning rights to land. It is therefore possible to argue that no government system can do without a territorial governance and spatial planning system allowing for the assignation of individual rights for the functioning of the land use system use (Janin Rivolin, 2012). These systems constitute the mechanisms through which the public authority steer and regulate the social usage of space through continuous processes of land use rights assignation, in turn playing a crucial role in favouring or hampering specific developments in the perspective of their overall coordination with the broader public strategies and visions. The above considerations contribute to understand how any reflection upon the potential development trajectories of a specific territory, cannot do without a thorough understanding of the institutional contexts within which this development is going to happen and, more in detail, of the set of actors and institutions that permeate and give substance to the latter. In this light, the proposed solutions for the sustainable

development of Nishi-Tokyo may achieve concreteness only when analysed against the broader framework of the Japanese territorial governance and spatial planning systems as well as of the actors' constellation that may contribute to their actual implementation. On the one hand, attention should be paid to various level of administration that are provided with spatial planning competences and, therefore, produce spatial planning tools that may, in one way or another, influence what intervention may actually take place and what would be instead out of reach. For instance, the transport plan produced by the Tokyo Metropolitan Region clearly has an impact on the organization of transport in Nishi-Tokyo, as well as on the future of its productive green zones. Similarly, through the development of regulations concerning the latter, the public actor has the chance to enhance their protection or, on the contrary, to make their preservation hard to happen. Finally, the norms that regulate the transfer of development rights from one dwelling to another/others, may ease the redistribution of development benefits among the owners of green areas, in so doing reducing development pressures on single plots of land. On the other hand, a mapping of all actors that may contribute or hamper development solutions should be performed. The word 'actor' refers here to both individual and composite actors involved in the (territorial governance) processes, all characterised by their preferences (which may change through persuasion), perceptions of the problem to be addressed (which may change through learning) and capabilities (the resources at their disposal). Actors and institutions are not independent in their action, as actors' actions are strongly (but never fully) determined by the ways existing institutions influence their perceptions, preferences and capabilities; similarly, the institutional framework may change, in the long run, as a consequence of the actions of actors (Scharpf 1997). Overall, the above shows how each territorial governance process presents multiple degrees of complexity. In order to make some sense of this process, to understand territorial governance and spatial planning systems as institutions may help to unfold such complexity as "[r]ules and systems of rules in any given society not only organize and regulate social behavior but make it understandable – and in a limited conditional sense – predictable for those sharing in rule knowledge." (Scharpf 1997, p. 40)

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The intervent of the Head of the Urban Planning committee of Nishi-Tokyo (prof. Miki Yasui at the Hosei University).

*(photos: M. Santangelo, 2018)*

# Land use planning system in Tokyo and in Japan

*A. Murayama*

We sometimes use the word "grey" to explain the characteristic of land use in Japanese cities: a mix of urban land uses (residential, commercial, and industrial) and rural land uses (farmland, forest, etc.). It is not "black and white" where there is a clear boundary between urban and rural land uses, but "grey". Here, "grey" is interpreted more broadly: 1) diverse types of "grey", not only "urban-rural"; 2) mix of uses, forms, and densities; 3) border between private and public; and 4) flexible transformation of land uses. These represent the elements of adaptable planning embedded in the Japanese urban planning system. But, not all urban areas in Tokyo are "grey". Master-planned urban (re) developments and the installation of skeletal infrastructures are found in existing urban areas.

National Land Use Plans are developed at the three levels of national, prefectural, and municipal governments under the National Land Use Planning Act, which aims to ensure the comprehensive and systematic use of national land. The contents of the plans at the three levels are coordinated. Each plan consists of the following sections: (1) the basic concept concerning land use, (2) the size targets and outlines for five categories of land corresponding to each objective, and (3) an outline of the measures needed to achieve these.

Based on the National Land Use Plans, the Land Use Master Plan is developed at the prefectural level to adjust land use at the same and to establish the basic land-use direction. The Land Use Master Plan is composed of a written proposal as well as a planning map on a scale of 1:50,000 that shows the boundaries of the Urban, Agricultural, Forestry, Natural Park, and Natural Reserve Areas. To promote appropriate and reasonable land use based on the Land Use Master Plan, measures are implemented based on individual laws and regulations for each of the five areas. Urban Areas are regulated by the City Planning Law, Agricultural Areas by the Law Concerning the Improvement of Agricultural Promotion Areas, Forestry Areas by the Forest Law, Natural Park Areas by the Natural Park Law,and Natural Reserve Areas by the Natural Conservation Law.

The City Planning Law regulates land use in Urban Areas. The city planning system under the law consists of the following parts:

- Designation of City Planning Area and Quasi-City Planning Area;
- Development of Master Plan for City Planning Area (by the prefectural government) and Municipal Master Plan (by the municipal government);
- Land use regulations (implemented through Land Development Permission, Building Confirmation and Notification):
    - Division of Urbanization Promotion Area and Urbanization Control Area;
    - Zones and Districts (Land Use Zones, Special Land Use District and Zones, Height Control District, etc.);
    - District Plan;
- Urban facilities (implemented through public projects):
    - Transport facilities (roads, etc.)

    - Public spaces (parks and green spaces, etc.);
    - Supply and treatment facilities (sewage, etc.);
    - Others;
- Urban development projects (implemented through public/private projects):
    - Urban development projects (Land readjustment project, urban redevelopment project and others);
    - Urban Development Expediting District;
    - Urban Development Promotion District;
    - Promotion District for Reconstruction of a Disaster Struck Urban Area;

Land Use Zones under the City Planning Law control building coverage, volume, and height of buildings as well as their uses under the provisions of the Building Standard Law. These regulations are designed to prevent a mixture of buildings used for different purposes in one area and to ensure a suitable environment for the specified type of land use. The volume of buildings is regulated using Floor Area Ratio (total floor area/site area) and Building Coverage Ratio (building area/site area). In addition, to prevent overcrowding and encourage efficient land use, a special bonus is awarded to the total floor area ratio of "excellent projects," which include the development of public infrastructures, open spaces, and housing in their projects.

Japanese urban environment can be characterized as the islands of planned development in the sea of urban sprawl where urbanization occurred without master-planned infrastructure. The formal approach of Japanese urban planning and development under the City Planning Law has been to increase the areas of planned development through urban development projects and to install skeletal infrastructure in already-sprawled urban areas. What results is vast areas of "grey" urban environment.

In recent years, European and North American cities have come to recognize the value of urban farmland. This mix of residential and agricultural land is already common scenery in sprawling urban areas in Japanese cities. Many Japanese planners consider sprawled urban areas – "grey" urban environment – as a failure of modern urban planning and tried to improve or even redevelop these areas. Re-evaluating the positive aspects of this grey urban environment may very well provide alternative solutions to a sustainable and resilient city.

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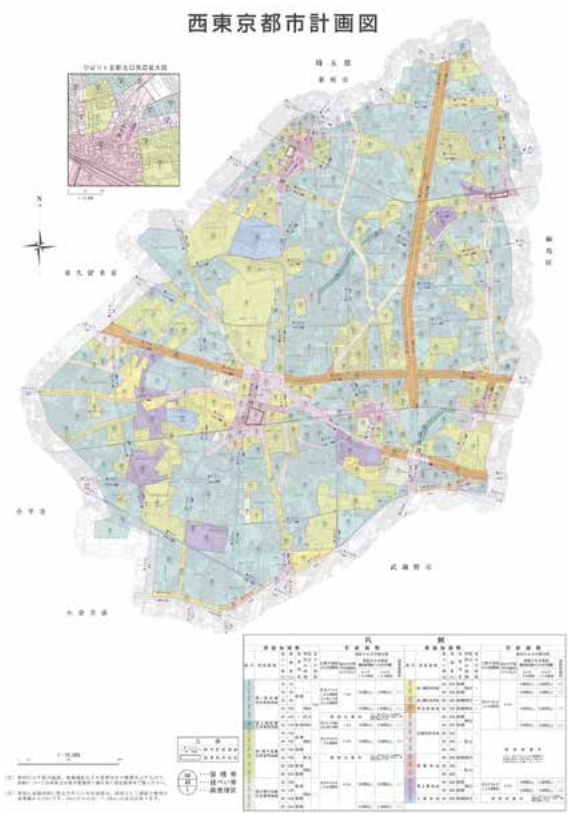


Land Use Zoning Map of Nishi-Tokyo City

# Regional Issues related to Nishi-Tokyo City

*F. Seta*

***1.The Future of Suburban Cities in depopulating Mega-Region***

Here regional issues related to Nishi-Tokyo City, a local government in the suburb of Tokyo metropolitan region are described briefly.

Though it is well known that Tokyo is one of the most populated metropolitan region or "mega-region" in the world, the recent tendency of aging and depopulation in Tokyo is not considered deeply in terms of regional planning in the future.

Almost all of mega-regions in the world have gather the population in national territories they belong to and both academicians and practitioners have discussed tasks of planning of mega-regions for dealing with increasing population.

However, mega-regions in Japan and East-Asia seem to follow a different story. It is anticipated that aging rates of countries in eastern and some south-eastern Asia like Japan, South-Korea, China or Thailand are already or will be risen rapidly, mostly due to low birth rate. The effect seems to be seen firstly in rural areas, where young generation are eroded to metropolitan regions, and the phenomenon recently become clear also in provincial cities and even suburbs of metropolitan regions.

Depopulation follows aging. The fundamental change of urban and regional planning derived by depopulation is the decrease of demand for urban services. Modern urban and regional planning has tackled with increase of demand for urban services caused by urbanization and population increase.

Infrastructures like sewerages, roads or trains, urban facilities like schools, libraries or community centers, or urban services like welfare services for children or elderlies, have been continuously supplied based on urban and regional planning. Various theories of planning set the common precondition of increasing demand. But that precondition will be changed in case of depopulating cities.

In Japan, Osaka-Kobe (Kansai) metropolitan region already starts to reduce their population as a whole and the influence of aging and depopulation can be seen from their fringe areas, which are generally less attractive than city centers or near suburbs in terms of commuting and employment.

***2. Regional Governance in Japan and issues to be considered regarding urban planning of Nishi-Tokyo***

Japan has two-tier local administration system, i.e. prefectures and municipalities. The former counts 47 and Nishi-Tokyo city is in one of the prefectural government "Tokyo Metropolitan Government (TMG)". The latter counts around 1700 and consists of cities, towns and villages based on population and some other criteria. Nishi-Tokyo city is surrounded by several other cities and wards in TMG and Saitama prefecture. Wards are special municipalities admitted and located only in TMG, whose authorities, including some related urban planning and tax collection, are limited and left to TMG. If we consider the situation of regional governance regarding Nishi-Tokyo city, we should take both vertical and horizontal

relationships into consideration.
The vertical relationship is mainly that with TMG. Though most of urban planning authorities are already devolved to municipalities, TMG still have large authorities and financial and human resources for developing and managing infrastructures and urban facilities.
Based on the discussion of a special committee under urban planning council, TMG recently shows the vision of their jurisdiction for 2040s (Figure 1). According to the vision, Nishi-Tokyo city is in the near-suburb zone, so-called "Urban Environment Harmonization Zone", set between the original central business districts (CBDs) and new sub-centers in Tama area. Unlike those of CBDs and new sub-centers, the desirable city shape of near-suburbs in the vision are rather vague, because the area includes many functions like residential, commercial, industrial and agricultural functions. Urban planning of Nishi-Tokyo city is expected to show the clear and realistic vision for near suburbs of TMG and the whole metropolitan region.
The horizontal relationships are those among surrounding cities and wards, who are under the same or similar situation.
Cities have managed their local infrastructures and urban facilities largely by themselves, other than larger infrastructures held by TMG, and sometimes by partial associations for special purposes. Basic urban policies are respectively decided by their mayors by the support of administrative bodies and approved and checked by local assemblies. Recent concerns of many mayors, administrative officials and local assembly members in these cities and wards are on countermeasures against aging and population.
Though they still gain population due to the national trend of mono-centralization to Tokyo metropolitan region, the future projection shows rapid aging and depopulation following in near future. Welfare policies for the aged, children and their parents are recognized as the most important issue.

### *3. Needs of Regional Collaboration*

Under the situation, cities and wards in suburban areas tend to compete each other, for getting more population of younger generation.
Constructing more nursery schools and kindergartens for small children and upgrading service for them and their parents are one of the main strategies to compete with and "rip off" young people from surrounding municipalities. However, such struggles seem to be meaningless if we consider the desirable shape of surrounding municipalities and the whole Tokyo metropolitan region. In that sense, urban planning and urban policies of Nishi-Tokyo should include collaborative measures with surrounding cities and wards, which upgrade the living environment of the whole area under coming phenomenon of aging and depopulation.
One of the important sectors is urban facility management.
The demand of urban facilities is changed by aging and will be decreased by depopulation. Financial limitation for managing various urban facilities and services will also become tighten by the decrease of productive population (tax payers). Urban facilities are now managed by respective municipalities individually, but their management should be integrated and conducted by the collaboration of neighboring municipalities in near future.

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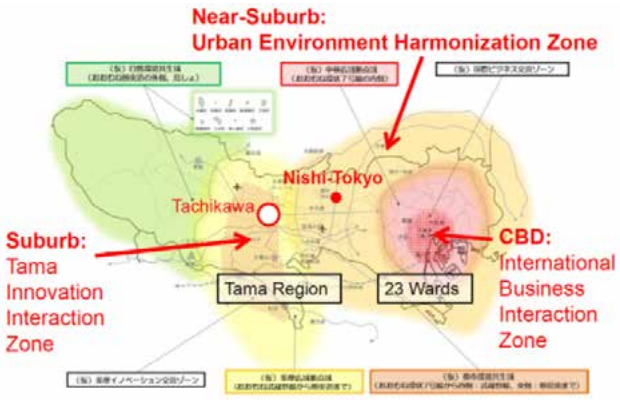


The Vision of the Jurisdiction of Tokyo Metropolitan Government (TMG) in 2040s (Source: Report of Urban Planning Council, TMG, 2016, added and translated by author)

# Challenges in landscape planning: the rural-urban interface

*C. Cassatella, A. Iida*

***1. Global challenges and goals.***

Half of humanity – 3.5 billion people – lives in cities today. In the EU, 72% of the total population live in cities, whose surface area has increased by 78% since the mid-1950s. In Japan, according to the census data in 2015, 91% of total population live in cities and particularly 68 % live in DID (Densely Inhabited Districts), whose surface area has increased by 331% since 1960 with rapid economic growth.

Rapid urbanization is exerting pressure on natural ecosystems and rural areas, resulting in land take, soil sealing, and decrease of open spaces. The loss of productive agricultural land affects world's food security. Moreover, the abandonment of rural activities means lack of maintenance of the land, environmental risks and landscape changes. Rural areas are also considered a source of essential ecosystem services (MEA, 2005), such as air and water quality, biodiversity, amenities and recreation, and renewable energy sources.

But, urban and rural categories are not sufficient anymore to describe the actual phenomena. Peri-urban, and rur-urban categories emerged in the last decades. For instance, 35.3% of the EU population live in intermediate regions (where the rural population is between 20% and 50%), which lead Eurostat (the European Commission's statistical office) to establish a new urban-rural typology. Peri-urban areas were defined as "discontinuous built development, containing settlements of less than 20,000, with an average density of at least 40 persons per km2" (PLURIEL, 2010). "There are urban pressures on peri-urban areas: housing shortages, transport congestion, decline of landscape quality, economic restructuring and social change. On the other hand, there are positive effects, such as proximity to markets and work places, quality of life, and innovation." (PLURIEL, 2010). In Japan, the situation is slightly different from the European one. The rural and urban land uses are mixed even in DID where the average density is more than 4,000 persons per km2. In fact, about 5% of the land in DID are rural land uses such as farmlands and forest. The urban sprawl resulted in the widespread mosaic land uses. And accordingly, functional linkages and conflicts between urban and rural areas can be found in peri-urban areas, as seen in Europe.

These conflicting developments highlight the need for a more integrated approach to rural-urban development, taking into consideration the economic, environmental, climate, demographic and social challenges, and the variety of linkages and opportunities. In 2013 OECD proposed a 'Rural-Urban Partnerships: an integrated approach to economic development'. The EU policy framework 2014-2020 fosters a better coordination of structural funds and new tools, such as integrated actions, community-led development and integrated territorial investments (EPRS, 2016), multi-level governance interactions. "Support positive economic, social and environmental links between urban, per-urban and rural areas by strengthening national and regional development planning" is also one of the targets of the UN Sustainable Development Goals n.11 (Make

Farmlands within the urban fabric of Nishi-Tokyo.
*(photos: C. Cassatella, 2018)*

cities and human settlements inclusive, safe, resilient and sustainable) (UN, 2015). The debate about the UN New Urban Agenda (2016) enlightens that decision making is made in urban areas, as long as urban population is the majority. Land use planning is one of the outcomes of decision-making processes, usually carried out by "urban" experts, which should be aware of the existence of specific resources, values, and interests of rural population, as well as of the fact that urban population need food supply and other services provided by rural areas. In addition, our life depends on resources provided by natural areas, without inhabitants and without voices.

***2. Landscape planning solutions***

Landscape planning (LP) can contribute to the above-mentioned goals, providing spatial scenarios and strategies at multiple scales. In fact, LP is based on the principle of integrating natural processes into spatial planning and territorial development, with a multifunctional approach. Traditionally, LP focuses on open spaces, but it may deal with the entire territory (see, in particular, the European Landscape Convention, 2000). General principles include: protecting natural resources such as soil and water; protecting biodiversity and ecological connectivity; protecting local identity expressed in cultural and natural heritage; enhancing quality of life, quality of everyday environment; enhancing landscape enjoyment, open door activities and recreation.

LP makes use of spatial concepts (such as green belt, green infrastructure) with a design approach. Nevertheless, it also deals with processes and addresses a variety of policies, programs and management tools for achieving its goals, so fostering strategic processes and multilevel governance interactions.

A spatial concept particularly successful, in terms of political agendas and related financial provisions, is the concept of green infrastructure (GI), thanks to its flexibility. "Green Infrastructure is built up of various, both natural and artificial elements at different scales and can be classified by their function" (CeeWeb and ECLC 2013). "GI: a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. (…) On land, GI is present in rural and urban settings" (EC, 2013).

***3. GI implementation in metropolitan areas.***

Due to the heterogeneity of possible components of a GI, it is impossible to present a comprehensive overview of how to plan and realize them. According to Austin (2014), GI planning can be implemented by a few tools, namely: resource protection; comprehensive planning; transfer of development rights; incentives and technical assistance. The following notes focus on how to preserve open spaces within metropolitan areas, acting at local level, discussing opportunities and threats.

A, Creation of protected areas, such as natural parks, or

agricultural parks. Despite farmlands may be considered an asset in metropolitan areas, protective designations of highly valued landscapes are an option not so likely, as ordinary or degraded areas may coexist and affect their integrity. However, the establishment of "agricultural parks" (with related agencies for their management and planning) has been experienced. This approach may cause social tensions on the boundaries of the areas.

B, Restrictive measures on building activity. Some municipal plans pursue the "zero-soil sealing" objective, stating that open areas cannot be used for development. The threat is that they can be abandoned.

C, Creation of public urban green areas, through the acquisition of land by Municipalities, has a tradition in open space planning. The acquisition may proceed by expropriation in the name of public interest or transfer (consequence of regulations for quantitative standards of public facilities) or, by transfer of development rights among areas – a financial technique of urban planning. In this case, it must be noticed that the availability of areas for greening depends on building activity.

D, Technical assistance and incentives, usually by a regional or national body, are useful tools for developing GI at local level, in a multilevel governance approach and multi-sectoral perspective. For instance, the EU Rural Development Policy funding system recognize the economic value of the so-called "environmental services", which can be provided by farming activity: new plantations for restoring habitats, set-aside of land, conservation of traditional built environment, creation of paths and farmhouses for rural hospitality. The mechanism is on voluntary basis, and spatial targeting of funding is an open question.

(CEEweb, ECLC 2013) suggest some "Keys to success for Green Infrastructure projects", emphasizing multifunctionality, involvement different stakeholders at all stages, utilization of different funds, good understanding and communication of benefits.

The above-mentioned tools imply the central role of public institutions. Besides, the role of bottom-up initiatives from citizens in preserving and managing green spaces may be further investigated (GreenSurge, 2016).

### *4. The Case-study of Nishi-Tokyo (Japan)*

Tokyo Metropolitan Government made two regional green master plans as tools of comprehensive landscape planning: "Master Plan for Creation and Improvement of Urban Parks" (2006, revised in 2011) with the aim of creating ecological network and improving resiliency to natural disaster; and, "Master Plan for Conservation of Green Spaces" (2010, revised in 2016) in order to conserve private green spaces.

Japanese cities have less urban public parks than the cities in western countries. For instance, the per capita urban parks spaces are 26.9 m2 in London, 18.6 m2 in NY, 11.6 m2 in Paris (MLIT, 2017), but only 3 m2 in Tokyo metropolitan area and 1.3 m2 in Nishi-Tokyo city. However, some private green spaces, which are the remains of rural era, still play important role as green infrastructure. Namely, farmlands, yashikimori (small forest around farmer's house), and forests of shrines and temples. If we include these private green spaces, the per capita green spaces in Nishi-Tokyo increase to 10.3 m2. Therefore, the municipality is now trying to conserve these assets with various planning tools.

In particular, the "Productive Green Zone" (PGZ) (Seisan Ryokuchi Chiku) system was established in 1974 and revised in 1992 in order to conserve farmlands with tax incentives. Because of the PGZ system, the urban farmlands have been kept in dense residential area. In 2017, the law was re-revised in order to encourage urban faming and the farmers receives more incentives such as the permission of building agricultural facilities in residential area.Another example is the "Green Conservation Zone" (GCZ) (Tokubetsu Ryokuchi Hozen Chiku) system established in 2004. The GCZ is the permanent contract between municipality and land owner for keeping private green spaces at the condition of a partial accessibility to the public. Land owner can receive tax incentives, as well as expense for maintenance. These incentives and assistance has allowed land owners to keep their rural land uses such as farmlands and forest in highly urbanized regions.

Japanese society is now facing population decline and urban shrinkage. The estimation of future population shows that only 9% of the existing Urban Population

Area will keep population in 2050, but the rest will be depopulated. This demographic change will lead to issues such as limited tax income of public sector and emergence of vacant lots and houses. However, at the same time, it will also bring opportunities such as the improvement of density of residential area and the increase of accessibility to green spaces.

In order to overcome the conflicts of urban and rural land uses in intermediate regions and create the new relationships, landscape planning will play a key role. Italian and Japanese students' work illustrated in this book shows new ideas for conserving urban green spaces and enhancing their multi-functionality, for example, using market-based financial mechanism such as the transfer of development rights. It is just a beginning of the new challenges for urban-rural interface, further discussions are needed.

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*C.C. and AI jointy wrote par. 1; C.C. sect. 2, 3; A.I. Sect. 4.

Private farmland protected by "Productive Green Zone" (above) and private forest protected by "Green Conservation Zone" (below).
*(photos: A. Iida, 2018)*

# Rural policies in urban areas: the European case

*E. Gottero*

In the last decades the role of agriculture has changed greatly. Today it has gradually assumed not only social relevance but also an important meaning in productive terms. Innovative Urban Agriculture (UA) forms such as community, allotments or squatter and family gardens, are issues that have received much attention in research. However, these forms of UA are only one side of the coin. According to some European research (see, for example: Lohrberg et al., 2016), the Urban Gardening (UG) corresponds mainly to the social sphere of UA and it is appreciated for its educational, recreational and therapeutic benefits. Generally speaking it is viewed as a tool to improve quality of life and the physical and mental wellbeing of citizens. A less frequent and less "romantic" but not less noble dimension, is the economic side of UA. In fact, farmers are primarily entrepreneurs and for this reason they adopt a business model that sometimes does not coincide with public interest and aims, but mainly with productive purposes.

***Urban planning and the Common Agricultural Policy (CAP): problems and possible solutions***

Today, in a context of great socio-economic changes, professional UA or Urban farming is an important asset of the contemporary city, especially in the Global North. Sustainable farming solutions can provide many benefits for the urban environment and can solve specific problems of the cities and of urban planning. Some examples are the role of Urban farming in terms of greening, functional restoration of the soil, soil de-sealing and recycling, reusing of abandoned areas, regeneration of brownfields, energy crops or maintain landscape features. However, this practice is not yet widespread and, sometimes, it is hampered by other land use forms, conflicting interests and planning limitations. Sectoral policies, although potentially very useful, have also introduced many limits in this development, especially in Europe. The total budget for the CAP 2014-2020 is around 360 billion euros, approximately 37% of total commitment appropriations for the EU-28. The CAP has preferred to support rural areas rather than firmly foster UA and sustain professional urban farmers. Although recently some Rural Development Programs (RDPs) interventions (especially "investment measures") have marginally involved urban farmers, the CAP has historically privileged the countryside, often forgetting about the city and the great "urban potential". Exploiting the proximity of the urban market high demand of food quality, short chains, landscape services, leisure and recreation activities and spaces could be an important and tangible asset, also in order to improve the farmers' income. In addition, if on one hand the CAP has showed poor propensity to support UA and poor ability to interface with planning frameworks and tools, on the other hand spatial planning has evidenced a lack of concreteness and knowledge. Urban planning has given increasing importance to urban development and conventional urban uses, rather than to encoding agricultural forms of urban uses. Thus, a possible solution is to define a new alliance between agricultural and

planning tools, based on an integrated vision of new urban demands, users and consumers. In Europe, several attempts are being made in this direction (see: Gottero, forthcoming; Rega, 2014).

***Urban farming in Europe: limits and potential***

According to many scholars and institutions, Urban farming can be traced back to three open questions. Firstly, why the CAP does not cover urban areas. There are many reasons why the CAP prefers the areas outside the urban boundaries. The most important ones regard the extensive distribution of funds and the political will to satisfy different economic categories such as farmers and their unions, Local Action Groups (LAGs), local authorities. This approach often neglects public interests. At the same time, the rift between town and country, the lack of clarity about the relevance of rural and urban linkages, as well as the gap between agricultural use and other competitive land uses, have widened unequal socio-ecological relations. No less important is the lack of clear and unambiguous spatial targets, especially in RDPs.

The second open question is which types of Urban farming the CAP should be financing. Also in this case, there is not a unique solution but many alternatives based on the concepts of multifunctionality and diversification. Thus, urban farming should be as much as possible near to urban needs, in order to operate in key critical socio-environmental issues of the cities such as environmental degradation, pollution, human health, quality of food, and so on. This does not mean only to foster concepts such as organic farming, traditional food, short chains, local products, but to focus also on innovative services, production and sales systems. For instance high-tech farms (hydroponics, aquaponics, vertical farming, rooftop farming), environmental farms that contribute to the maintenance of biodiversity, protected areas and landscape features, the enhancement of the city's green infrastructure, as well as farms able to integrate urban welfare system offering social and local services.

The last open question regards the building of a common language between spatial planning and agricultural policies. That is, how to integrate planning tools with rural development or vice versa. With regard to planning tools, encoding rural policies and local development tools (environmental stewardship schemes, local development plans, territorial agro-environmental agreements, agricultural parks, cooperation measures) is an operation being tested in some European countries. They are devices that could accept integrated solutions in the planning frameworks. It is not so easy to replicate this model in the current CAP framework. Fostering site-specific tools, supporting pilot projects, as well as new spatial criteria to define eligible areas, are difficult to apply in order to recognize urban values and dimensions of agriculture.

The first draft of the CAP for 2021-2027 seems not to accept urban instances yet. Nevertheless, these are problems shared by several international institutions at different levels. For example, FAO and United Nations have in different ways and for different reasons repeatedly highlighted the importance of agriculture in urban environments (see, in particular: UN-Habitat, 2015). Therefore, it may be the task of each European Member State's spatial and landscape planning, at national and regional level, to claim these values and equip themselves in order to tackle these problems. The tools are available: it is time for planners to use and apply them.

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# Water sensitive planning

*M. Granceri*

The intense global urbanization process has its roots in the 20th Century and still is occurring causing changes in the city environments. According to UN-DESA's World Urbanization Prospects (2015) these impacts may be intensified whether we consider that the next decades will be the period with the fastest growing urban areas, with an increase from 3.9 billion urbanites to 6.4 billion; reaching the 64% of the global total population.

Regarding land use and water issues, urbanization usually implies in an extension of impervious surfaces which can be a source of significant changes on the water cycle, e.g. the risk of flooding and the pollution impacts on receiving bodies. Urban expansion threatens several blue ecosystem services (Haase, 2015), which may be relevant for urban areas, such as habitat provision for food production, air cooling for local climate regulation, water retention for flood control and mitigation, aesthetic values for leisure and tourism activities, among the others. Thus, urban futures are also water futures.

According to the 5th IPCC report, urban futures also have to take into account the effects of climate change (CC) and global warming, which have already started affecting city systems. Adaptation is one option considered to tackle CC and water-sensitivity can support it, aiming at preserving both the green and the blue resources, especially in urban areas.

In the last decades, the scientific community has started developing the concept of Green and Blue Infrastructure (GBI), which added the blue to the Green Infrastructure (GI) notion (Benedict et al., 2006). GBI is a multiscalar concept but it is mainly used at the local scale in urban and peri-urban contexts and is considered both as a concept and as a process at the service of urban planning. Based on GI's definition by Benedict and McMahon (2006), GBI can be defined as an "interconnected network of green [and blue] spaces that conserves natural ecosystem values and functions [with a water-sensitive attitude] and provides associated benefits to human populations". Implementing GBI is reported as a potentially effective strategy for preserving the ecological cycles and the water resources.

Furthermore, GBI can play a crucial role to reduce environmental and climatic issues in cities and thus contributes to the enhancement of human health, residents' quality of life and sustainable development.

GBI embeds a water-sensitive approach, whose basis is in the Water Sensitive City (WSC) concept (Brown et al., 2008). WSC is a futuristic vision which caught the attention of academics and practitioners interested in envisaging potential sustainable and resilient urban water futures. WSC is framed in the "Urban water management transitions framework" (Fig.1), as the last step of a temporal, ideological and technological transition of management paradigms.

The urban water transitions framework can be used as a tool for assisting local policy-makers with the task of identifying sustainable and resilient pathways. It can be used also as a benchmarking tool to assist decision-makers and administrative staff for assessing the transition of their cities.

The implementation of GBI strategies often aims to increase urban resilience to climate change, improving the coping, adaptive and mitigation capacities within cities and can help cities to progress towards a WSC.
The case of Turin city is helpful in this view to highlight the outcomes of more than two decades of environmental and landscape planning processes at local and metropolitan scales.
In the early 90's of the 20th Century, Turin city decided to start with a new vision of itself called "Torino Città d'Acque" with the aim to face the post-industrial phase of the city and to begin the re-integration of water streams in their citizens' visual and recreational daily life. At that time the river Dora was totally hidden by industries and channelized in underground pipes and the process of river rehabilitation and land reclamation, which started in the first decade of 21st Century, took almost 20 years. In addition, a GBI prodromal strategic planning process called "Corona Verde" was carried on at metropolitan scale and it reinforced the greenways network and created an integrated green spaces system (Cassatella, 2013). Moreover, this process helped to create the basis for the recent on-going planning process whose focus is on GBI implementation that it is strictly integrated into the municipal CC Adaptation strategy.
Nowadays Turin city can be considered as a Waterways City thanks to these long-term visions and long-lasting planning processes, even though there are still old (i.e. industrial point source pollution) and new challenges (i.e. climate change) that affect it.
Turin experience might be seen also as a good practice to take inspiration from. Despite almost 10.000 kilometres of distance and differences in terms of culture and urban dimension and location, Nishi-Tokyo city's ongoing planning processes have similarities with the Turin case.
Nishi-Tokyo municipality is currently attuning their urban policies towards an ecosystem-based and health-oriented vision whose main concern is their citizens' quality of life. Even though Nishi-Tokyo doesn't have an explicit GBI-oriented policy, the Metropolitan Government of Tokyo is currently developing a water-sensitive strategy for mid to big-sized rivers. Nishi-Tokyo city has the river Shakujii, which goes through its southern part for almost 4 kilometers, and is one of the most important blue infrastructures for Tokyo metropolis.
Actually, Nishi-Tokyo can be framed as a Drained City because of the Shakujii river conditions, which make it, for most of the path, a channel whose purpose is flood protection. The aim of this metropolitan strategy is to revitalize most of the riverine sides and make it a social amenity for their citizens. Likewise the Turin case, Nishi-Tokyo city could therefore exploit supra-municipal efforts jointly with its environmental agenda in order to connect the blue with the green infrastructure, which is made of parks and agricultural-green zones, with the purpose to upgrading to a Waterways City.

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# Urban environmental planning for supporting the mitigation or adaptation to climate change

*K. Matsuo*

Cities all over the world are facing demographic, environmental, economic, social and spatial challenges that has ever been experienced. There has been a phenomenal shift towards rapid urbanization, with 60% of the world population expected to reside in urban areas by 2030. In October 2016, at the UN Conference on Housing and Sustainable Urban Development (Habitat III) member states signed the New Urban Agenda. This is a practical document which sets global standards of achievement in sustainable urban development, to rethink the way that we build, manage, and live in cities. Based on that contents, it is indispensable to make cities and human settlements inclusive, safe, resilient and sustainable uniting cooperation with committed partners, relevant stakeholders, and urban actors, including at all levels of government in order to achieve the Sustainable Development Goal 11 toward 2030. Especially, in the Goal 11-b, the following is written; "By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels." Therefore, for example, the introduction and implementation of comprehensive policies and plans considering the mitigation and adaptation of climate change in each city help this goal achievement. In the case of introduction and implementation such urban planning in the city scale, for example, the Klimaatlas is therefore proposed as a tool for supporting urban planning. In German, "klima" means climate and "atlas" means maps. In a broad sense, Klimaatlas is defined as "The maps that are intended to understand the regional climatic environment well." In German cities, Klimaatlas are subject to utilization by urban planners in the narrow sense that they have been made or are utilized with the aim of planning for the mitigation of atmospheric pollution. However, in recent times, the Klimaatlas has been used in the adaptation or mitigation to climate change. Such maps are called Urban Environmental Climate Maps (UECMs) (Ng and Ren, 2015; Sasaki et al., 2017). The image of UECMs (the case of Hiroshima City) is shown in Figure. The role of this map is to provide information from the perspective of the urban climate to decision-makers (including the public). Therefore, the purpose of creating these maps is to support design. In the UECMs, the essence of climate research results by experts is described. When stakeholders (citizens, planners, architects, specialists, and so on) make decisions about urban planning, architectural design, and environmental policies, they can use these maps as communication tools, as can other experts such as climatologists. For example, in Tokyo, Japan, the map is made by overlaying the arrow indicating wind paths by using the numerical simulation results on the land use map (Ojima, 2010). Also, the "Thermal Environmental Map" has been produced. This map shows some problematic zones that are classified by the atmospheric heat load characteristics from surface

or buildings in the 500 m mesh, and then extracted. Specifically, the targeted area is classified by the results of the multivariate analysis (principal component analysis and cluster analysis) performed by using the anthropogenic heat or land cover data (Bureau of the Environment, Tokyo Metropolitan Government, 2005).

In the case of introduction and implementation such urban planning in the city scale, for example, the framework of the Ecodistricts (Seltzer et al., 2010) is considered to be effective. Specifically, in the areas of existing urban districts, hard and soft projects are performed that contribute to reduce the environmental loads including "low carbonization" toward a sustainable cities all over the world. When adapting this framework in the suburbs of Tokyo where residential land and are mixed, agricultural land becomes the one of the important climatic resources, and it is possible to purpose the Ecodistrict related to mitigation or adaptation measurements utilizing them. For example, the temperature reduction effect decreases with the reduction of the area ratio of the paddy filed within a certain range and the increase of the mixing ratio (Yokohari et al., 1997).

Proposing the UECMs or Ecodistricts, it is important to define the goals in targeted area and to understand whether the urban planning considering that goal is based on the objective data. These are the roles of the university and it is necessary to suggest ideas and policies based on the scientific knowledge so that stakeholders can make decisions and build consensus.

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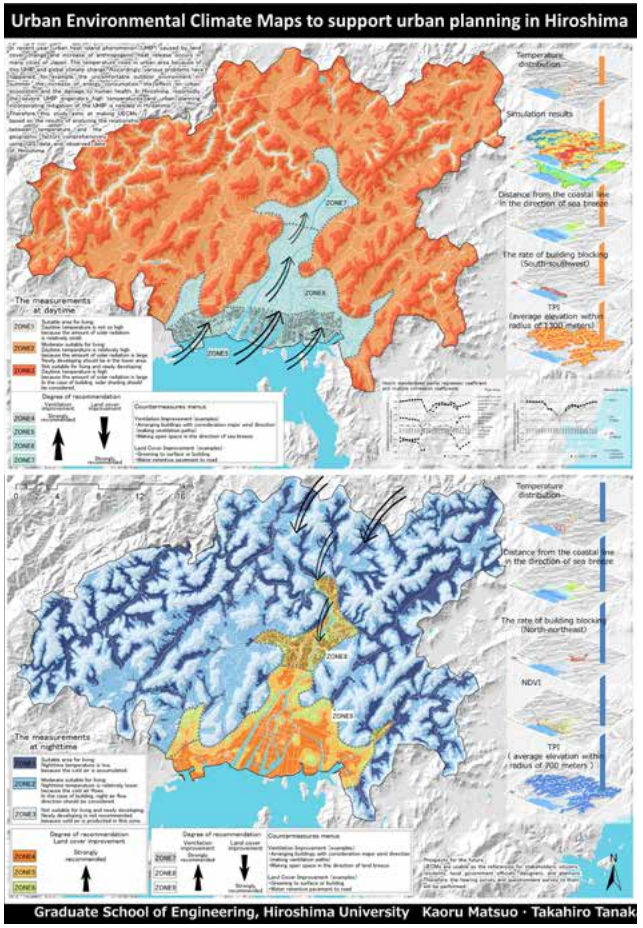


Urban Environmental Climate Maps in Hiroshima City

# Academic responsibility to enact a new system: the Japanese case

*T. Yamazaki*

Recent academic society expects academic researchers to play the social role for a sustainable future. For example, "Future Earth" is one of the largest global movements that promotes academic researcher to interaction between social and academic community when they design the research plan. Especially in urban and regional studies, it seems that researchers should contribute to a developing society.

In Japan, the Urban Park Act was revised in June 2017 through public and academic partnership. Through the revision, Park-PFI system was installed. This system encourages public sectors to develop the park facility with private sectors. When local government use this system, they choose the private company which builds and manages the profit-making facility such as cafe and restaurant in an urban park through a public offering. Focusing on the process of making a Park-PFI system by the national government, they referred several model cases in Japan and got advice from academic researchers who surveyed the actual situation or the problem of a public private partnership.

Considering this situation, the purpose of this article is to discuss the academic role whose major is urban and regional study. To address this view point, I concentrate on the process of Park-PFI system based on Urban Parks Act in Japan.

In the history of the enactment of the Park-PFI system,"New Generation's Urban Parks Committee" that was managed by the national government played the principal role. This committee formulated the plan which gave a new direction of Urban park governance. The member of this committee includes six academic researchers, one private researcher, and three civil servants. They discussed about 10 times to consider the future strategy of public private partnership in urban parks, planning and management scheme, and so on.

The followings are the committee's conclusion on the public private partnership (PPP). 1. The national government should make a system to utilize the open space through a discussion with public, private, and academic sectors. 2. The local government should promote to redevelop the urban parks with consideration of the area characteristics. 3. The Urban Park Act should be revising to allow both public and private sector can manage the park and its facilities.

Based on these suggestions, Park-PFI and other systems were installed in 2017. These three points are mainly suggested by the academic researchers. Most of the researchers surveyed the model projects which had already built profit-making facilities in urban parks and managed by private sectors. In the following, I focused on the two model cases. First, Fugan Canal Kansui Park with Starbucks coffee in Toyama prefecture is one of the famous cases, because the cafe is called "The World's Most Beautiful Starbucks Store". Toyama prefecture managed the park and they developed the park based on a master plan of park design. According to this plan, the prefectural government offers the companies to build and manage the profit-making facility. And then, Starbucks Coffee Japan Co., Ltd won the competition. Now

Kansui Park is the most popular tourist spot in Toyama prefecture. Private sector allowed to manage the café 20 years based on the agreement. Second, Tennoji Park with several profit-making facilities is a similar project, which city government offers the companies to redesign the attractive entrance area of the park. Kintetsu Real Estate Co., Ltd was won the competition. They already redeveloped and managed the buildings surrounding the park. So, their proposal is to revitalize the whole area including the park. Based on the proposal, they built 12 profit-making facilities in the park which includes a cafe, restaurant, football court, and so on. They manage not only profit-making facilities but also park facilities such as pathway and lawn space by their profit.

The government enacted Park-PFI system referencing the comments from committee members and situations of pilot projects. So, the system contains several special measures. First, conventional system only allowed 10 years to manage the profit-making facility by the private company. On the other hand, new Park-PFI system allows the private sector to manage the facility 20 years to stabilize the business. Second, the money paid by the private sectors uses for park management based on their agreement.

Through the survey, I pointed out the two roles of academic researchers. Academic researchers should design the research structure with consideration who wants this information. Because of that, researchers should consider social problems.

In Japan most of the academic researchers majoring urban and regional studies belong to the city planning committee managed by local authorities. A lot of guidelines and documents written by the national government encourage local government to have advice from academic researchers. These situations indicate that academic researchers has rights to say something in developing local community or national policies.

***References***


- Ministry of Land, Infrastructure, Transport and Tourism, 2017, "Guideline for utilize the Park-PFI system", [in Japanese]
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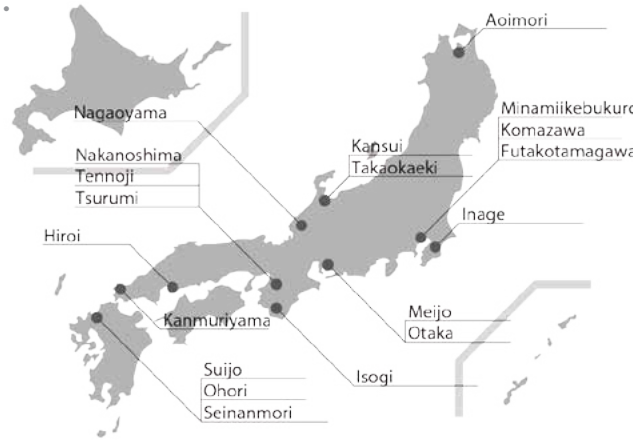



Japanese pilot projects of building profit-making facilities in urban parks.

Profit-making facilities in Tennoji Park, Osaka (above) and Profit-making facility in Meijo Park, Aichi (below).

*(photos: T. Yamazaki, 2018)*

# SECTION II

Joint Workshop group on site, The University of Tokyo and Politecnico di Torino.
*(photo: A. Murayama, 2018)*

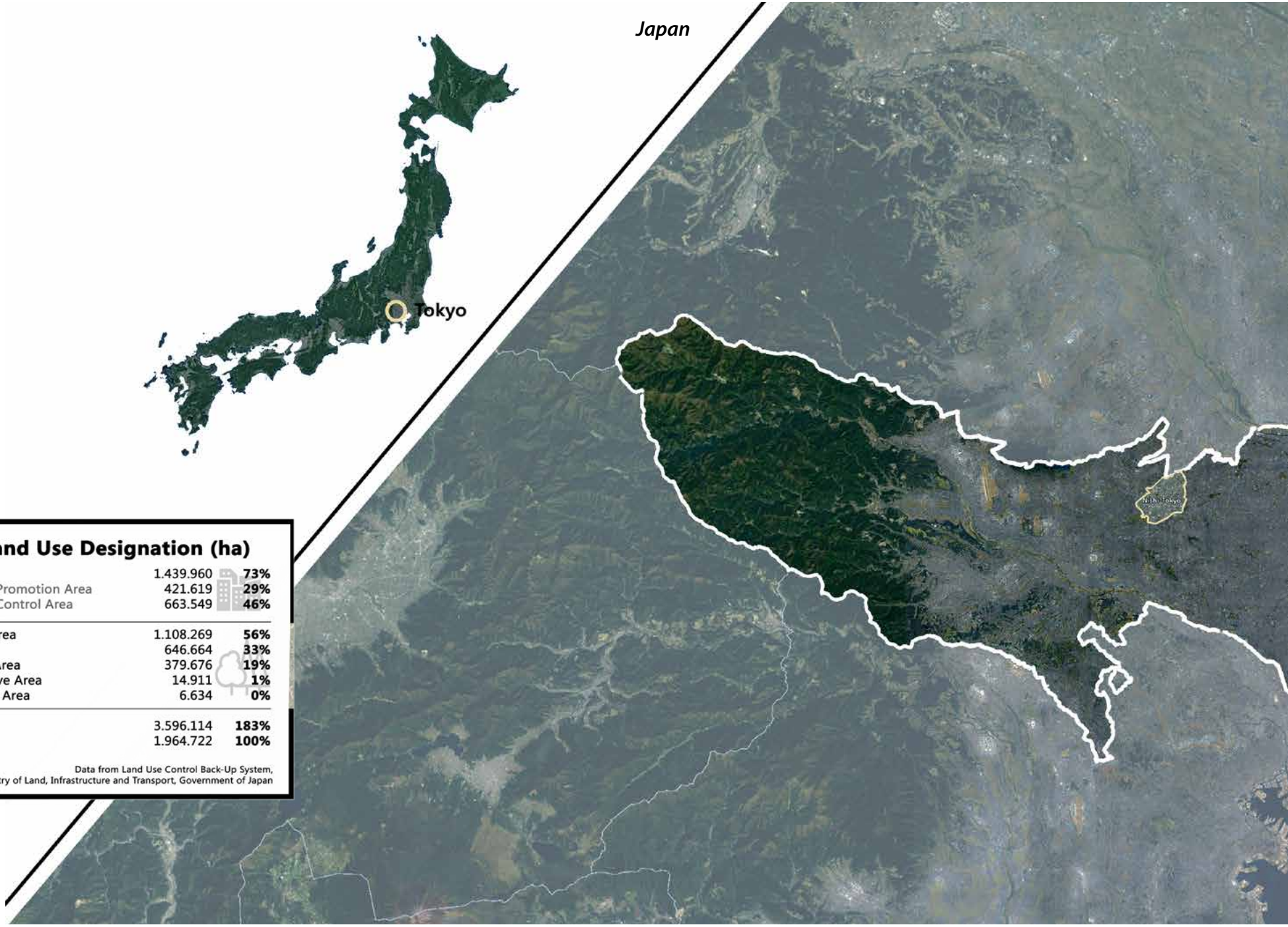
Residual space among housing, Sumyioshi-cho.
*(photo: G. Greco, 2018)*

Farmland, Sumiyoshi-cho.
*(photo: G. Greco, 2018)*

***Shaping Ecodistricts in Nishi-Tokyo***

*Japan*

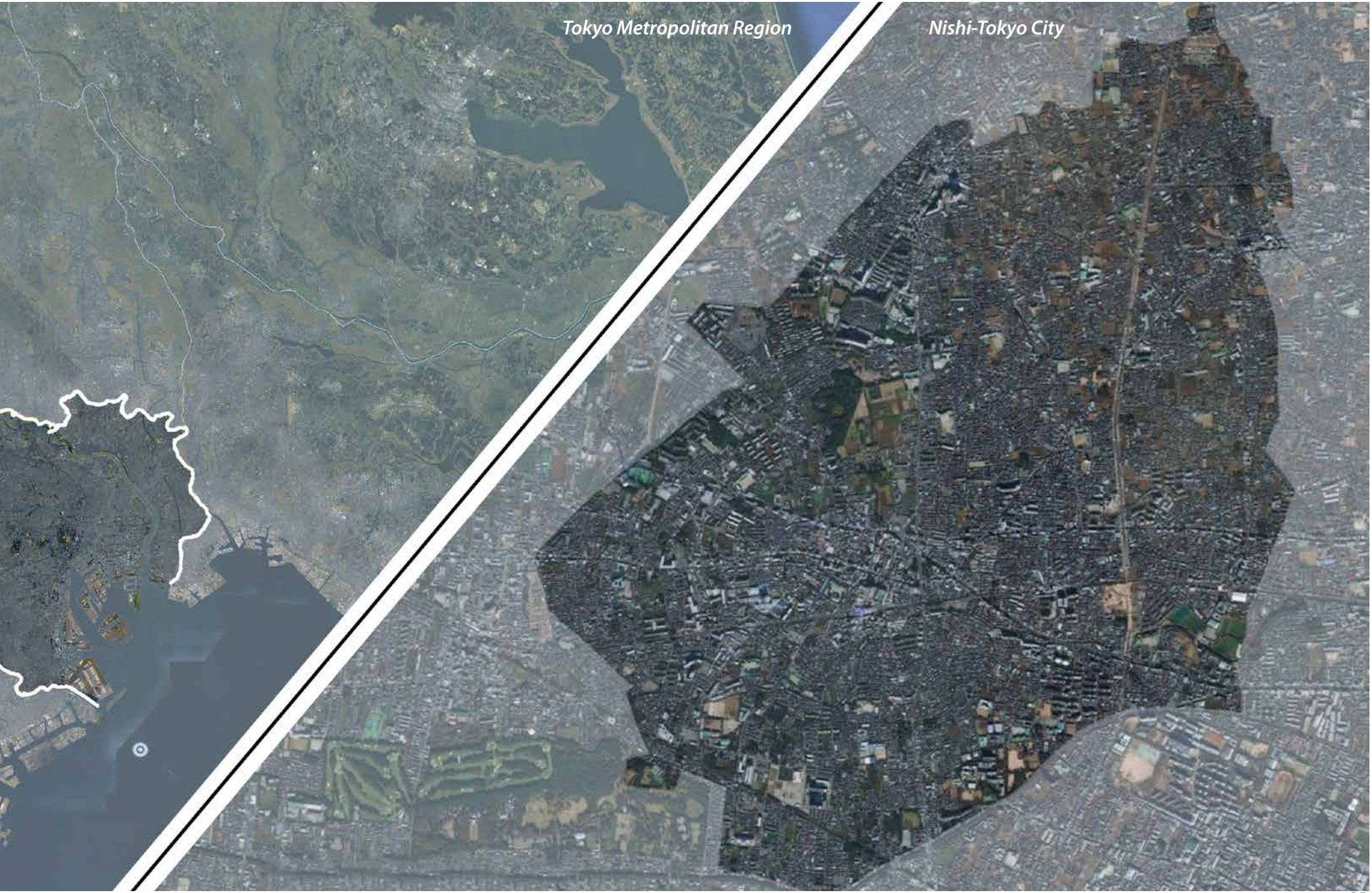



## Area of Land Use Designation (ha)

| | | |
|---|---|---|
| Urban Area | 1.439.960 | **73%** |
| Urbanization Promotion Area | 421.619 | **29%** |
| Urbanization Control Area | 663.549 | **46%** |
| Agricultural Area | 1.108.269 | **56%** |
| Forestry Area | 646.664 | **33%** |
| Natural Park Area | 379.676 | **19%** |
| Natural Reserve Area | 14.911 | **1%** |
| Undesignated Area | 6.634 | **0%** |
| Total | 3.596.114 | **183%** |
| Actual Land | 1.964.722 | **100%** |

Data from Land Use Control Back-Up System,
Ministry of Land, Infrastructure and Transport, Government of Japan


Tokyo Metropolitan Region
Nishi-Tokyo City

# Introdution to Planning Issues in Nishi-Tokyo City

*A. Murayama*

In the Tokyo suburbs, there are "sprawled" urban areas with a mix of agricultural and residential land uses supported by minimum urban infrastructure. "Urban sprawl" in Japanese cities are different from that of western countries where planned residential areas with high-standard urban infrastructure such as roads, parks and sewage systems continue to grow in the pioneer of urbanization. "Urban sprawl" in Japanese context is an urbanization where housing construction occurred before city government or urban development corporation was able install modern infrastructure such as a hierarchical system of roads from arterials to neighborhood streets, a park system, various public facilities or a sewage system to carry wastewater directly to treatment plants. This was a result of rapid urban growth after the World War II. The pressure of housing development was so high that governments had to allow housing construction with minimum infrastructure, i.e. 2m segment of the property attached to the street of 4m wide. Also, urbanizing areas were often originally farmlands where many farming land owners tried to keep their farmlands, making it difficult to develop planned residential neighborhoods. As a result, a "growing patchwork" of residential and agricultural land uses appeared in the suburbs of Tokyo.

"Urban sprawl" in Japanese cities was considered as a failure of modern urban planning. However, the perception seems to be changing with more focus on the positive sides. Firstly, there is a growing demand for urban farmland as an essential part of a suburban lifestyle. Community farms have gained popularity among urban dwellers without their own gardens. Secondly, there are active farmers who wish to continue farming in a highly urbanized environment with strong will to conserve family history and to provide fresh products to the communities. Thirdly, people have realized that urban farmlands provide various environmental services that help to achieve higher level of sustainability and resiliency. SDGs and New Urban Agenda by the United Nations have changed the perception. Fourthly, the incremental urbanization seems to have resulted in the mix of different age groups since there are constantly new young home buyers. This is unlike the planned residential neighborhoods or "new towns" where housing was provided in such a short period resulting in an uneven distribution of age groups.

The entire area of Nishi-Tokyo City is designated Urbanization Promotion Area. However, many of the farmlands in Urbanization Promotion Areas are designated "Productive Green Zones (PGZs)", one of the zoning districts based to respond to the farmers who wish to continue their farming activities. According to the law, "PGZs" are conserved as farmlands contributing to the prevention of pollutions and disasters, as well as the conservation of urban environment in harmony with agriculture, forestry and fishery. However, the owners of the farmlands designated as "PGZs" can ask the city to purchase their lands in the following situations: (1) 30 years have passed since the designation of "PGZs", (2) when the main farmer passed away, and (3) when the main farmer was involved in a severe accident that

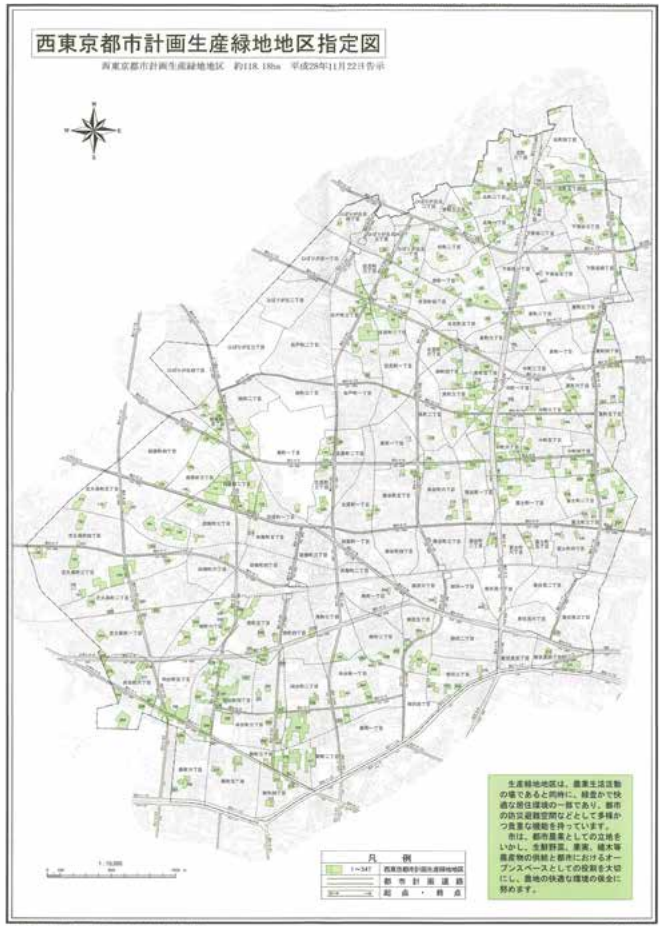
disables him/her from farming. When neither a city, other public agencies nor other farmers can purchase the farmlands, "PGZs" are simply released for urban development.

On the other hand, in the sprawled urban areas without modern infrastructure, residential environment deteriorates by the loss of farmlands. In addition, the development pressure of single-family homes seems to be decreasing and the traditional development scheme of converting parts of farmlands to small housing estates is no longer profitable.

Nishi-Tokyo City is one of the typical cities that face these issues. A sub-committee of Nishi-Tokyo City Planning Committee was established recently to discuss on these issues. So, we conducted a graduate school level studio to explore planning, design and system to shape low-impact suburban ecodistricts by balancing urban development and farmland conservation, also considering the slowly-developed arterial roads and the introduction of the new "Country Residential Area" as the 13th zone in the zoning system. To achieve these goals, students studied the system and actual condition of "PGZs", development of arterial roads, housing development trend, suburban lifestyle, and concepts and examples of ecodistricts frameworks, and performed high-level analysis and proposal-making. There will be a feedback of the works to the urban planning practice in the city.

The target areas of this studio were the two districts in Nishi-Tokyo City. Citywide analysis and proposals were also required to understand the context of the target districts. Sumiyoshi-cho 1 and 2 District is a district with high development pressure near Hibarigaoka Station. There are planned but undeveloped arterial roads. The farmers grow vegetable such as cabbages. Mukoudai-cho 4 District is a district with a strong garden tree industry with strong intention to continue their businesses. It can be considered as residential area with "urban forest".

Productive Green Zone (PGZ) in Nishi-Tokyo.
*(photo: A. Murayama, 2017)*




Productive Green Zone Map of Nishi-Tokyo City.

# *A visual narrative of the* AREA

Farmlands, Sumiyoshi-cho.
*(photo: A. Murayama, 2017)*

Public open area, Mukoudai-cho.
*(photo: A. Murayama, 2017)*

Boundaries between river, housing and rural areas, Mukoudai-cho.
*(photo: A. Murayama, 2017)*

Tree nursery, Mukoudai-cho.
*(photo: E. Spadea, 2018)*

Tree nursery, Mukoudai-cho.
*(photo: E. Spadea, 2018)*

Housing facing a public open space, Mukoudai-cho.
*(photo: G. Greco, 2018)*

Farmlands, Sumiyoshi-cho.
*(photo: G. Greco, 2018)*

Farmland, Sumiyoshi-cho.
*(photo: G. Greco, 2018)*

Farmland, Sumiyoshi-cho.
*(photo: G. Greco, 2018)*

Farmland, Sumiyoshi-cho.
*(photo: G. Greco, 2018)*

# The University of Tokyo studio proposals

*K. Kurimoto, S. Islam (editors)*

The University of Tokyo organized a studio work "Re-designing the urban fabric" as a design studio for graduate school students. 10 graduate students, including 2 non-Japanese students, chose Nishi-Tokyo city as case study area. With having chances of having interviews with Nishi-Tokyo city office members and also with several local farmers, students conducted the studio work for 4 months, and had a chance to present the final output not only to university professors, but also to the city government members.

The final presentation title was "Shaping an "Eco-district" in Nishi-Tokyo City". The "eco-district" concept is adopted in cities across the world, and is defined as "a neighborhood or district, which is committed to the implementation and growth of sustainability". Nishi-Tokyo city is a typical suburban city in Tokyo, around 25km from central Tokyo. This city experienced rapid population growth after WW2, and thus rapid unplanned development sprawled over agricultural land. This did not only result in residential areas with poor quality of road network and little areas of urban parks, but also left fragmented urban farmlands (Productive Green Zones) scattered inside residential areas. As Nishi-Tokyo city's population is now on its peak, and is expected to decrease soon, urban farmlands need to be protected from future unplanned residential development. Also, when considering an "eco-district", Nishi-Tokyo's urban farmlands are key components of its urban green space, thus making full use of them and opening them to the public is a key in achieving an "eco-district" in the city. Thus, we declared that Nishi-Tokyo city, which is a typical suburban city of Tokyo, with its many urban farmlands remaining, has the potential to build an "eco-district" by re-designing its urban fabric.

Through city-wide analysis and district scale analysis in 2 case study areas (Sumiyoshi-cho and Mukodai-cho) (Figure 1), we have come up with two city-wide proposals and two district scale proposals.

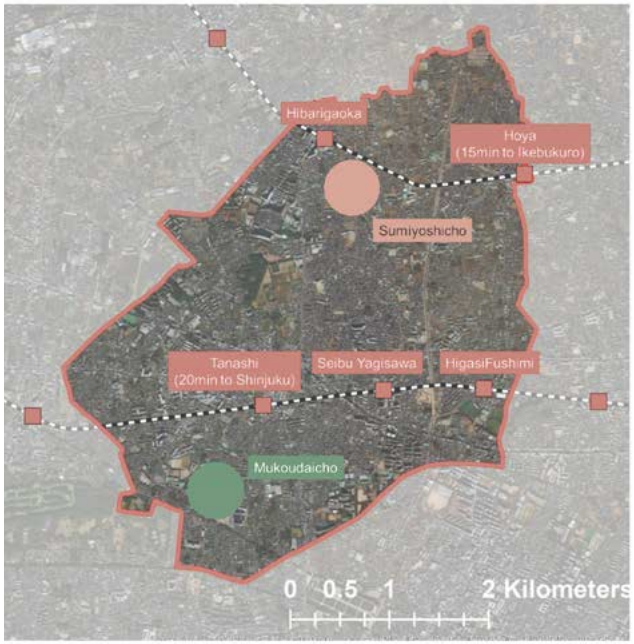



Fig. 1. Overview of Nishi-Tokyo.

## 2. City-wide Proposal:

### *2.1 Transportation:*

#### *2.1.1 Transportation Scenario*

Unlike the other cities in Japan urban development starts with the establishment of railway, Nishi-Tokyo was not exceptional in that case. Before establishing the modern rail system in Hoya (15 April 1915) and Tanashi (16 April 1927). Tanashi was a crossing point of major roads, and formed a post town in the Edo era, which remains other areas underdeveloped. 2008's data regarding the means of transportation of Nishi-Tokyo says 26% people commute in train where 28% of them commute on car & bus cumulatively. Meanwhile the use of non-motorized mode (walking & bicycling) remain more than 50% of total commuting (26.3% & 26.8%) respectively.

To visualize the transportation condition of Nishi-Tokyo we make two different categories:

i. Public Transportation:

Seibu Ikebukuro Line and Seibu Shinjuku Line runs from East to West through Nishi-Tokyo, connecting 5 stations where other areas are served by roads. Mostly Public and private bus services on road though the bus routes are still insufficient in number which makes the city's transportation inconvenient for elderly dominating people. Figure 2 shows a lot of transport inconvenient places (Far from 1km from train station & 300m from bus stoppages).

ii. Road Condition:

The existing number of Roads are not adequate, especially from North-South axis. Statistics shows 53.7% community roads in Nishi-Tokyo are under 4m where the percentage is 83 under 6.5m roads (Source: 2008 Nishi-Tokyo City Transportation Plan) results in congestion on roads, lack of pedestrian accessibility and accidents. To get rid of this Nishi-Tokyo municipality wants to construct more roads which is also difficult within their limited budgets as well as conflicting the idea of protecting PGZ (Protected Green Zone) & (Tamako cycle path). Our study shows by implementing the proposed arterial roads 127 number of PGZ will affect fully or partially among 401 PGZ (31.7%) and affected area is 50ha among 122Ha (41.1%).

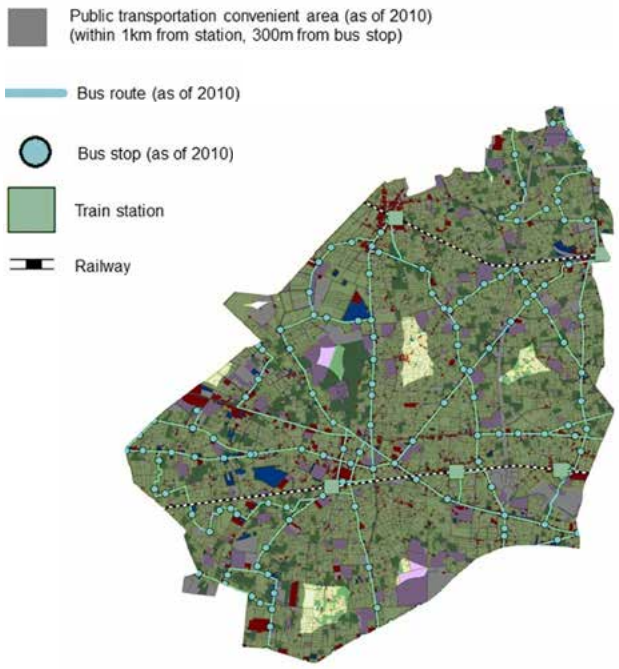



Fig. 2. Transportation scenario of Nishi-Tokyo.

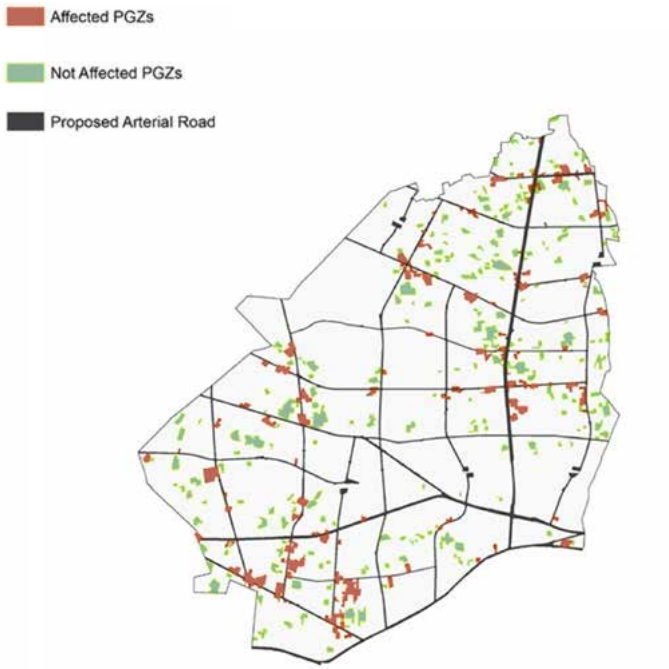



Fig. 3. Affected PGZs by constructing proposed arterial roads.

### *2.1.2 Transportation Proposal*

After understanding the transportation scenario, the studio's aim was to mitigate the traffic congestion considering the declination of PGZ and pedestrian as well as the cities prioritization roads. Four major contemplations were taken while construction of New road network.

1. Reducing the destruction of urban farmlands.
    - By cancelling the current planned road that would run over many farmlands
2. Conserving the potential pedestrian walkways.
    - By cancelling the current planned road that will completely destroy the Tamako bicycle way which is 11km long bicycle and pedestrian connecting Tama Lake to Nishi-Tokyo.
3. Widening the existing roads.
    - Instead of making new roads, use the full potential of the existing roads which helps to curtail municipality's budge regarding new infrastructure.
4. Involving less entity for acquiring property.
    - Less entity means less expenses and less time consumption. To save the expenditure of the city government and raise feasibility of the construction.

Last but not the least sometimes providing some bus services through city's disconnecting areas can also be a better alternative than making new roads.

Our proposal for new road construction can also reduce the number of affecting properties and PGZ.

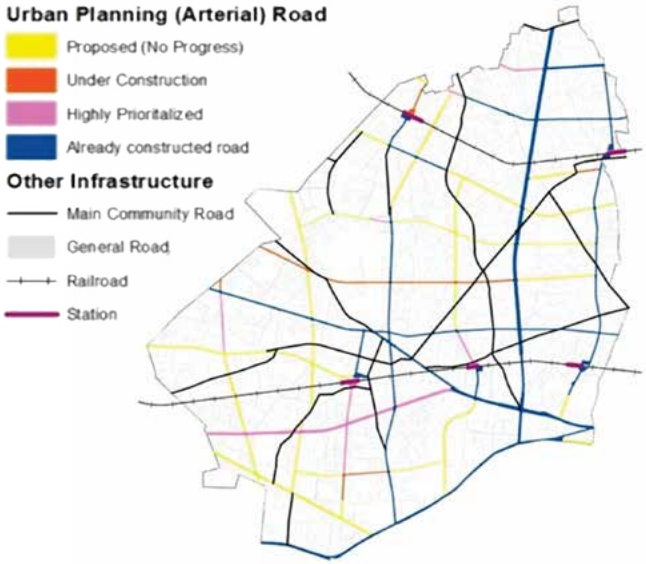



Fig. 4. Nishi-Tokyo City proposed and existing road network.

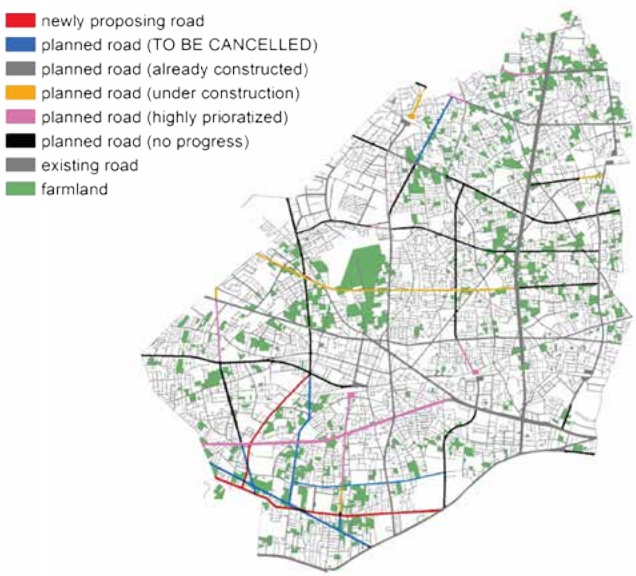



Fig. 5. Studio's proposed road network considering the principals

1. The number of buildings to be demolished:
2.103 of Houses vs 1.811 of Houses

292 houses will be saved!

2. The number of PGZs to be affected:
86 PGZs vs 61 PGZs

25 PGZs will be saved!

### *2.2 Land Use:*

### *2.2.1 Transfer of Development Rights (TDR) System*

i. Current Problems

Through analysis on farming and farmers in Nishi-Tokyo city, we have found a unique economic situation of urban farmers. Many of them operate farming in small farmlands, and consequently many of their agricultural income is far below the average income of households in Tokyo. Instead, many of them rely on other sources of income, mainly real estate management. Thus, in case of inheritance, although there is a tax payment grace on PGZs, tax on their owning property is a large burden. To compensate for the high inheritance tax on their real estate, farmers are mutually forced to sell part of their farmland, which is one of the main economic reasons why urban farmlands are decreasing.

Also, through analysis on housing issues in Nishi-Tokyo city, we have found that many households in Nishi-Tokyo city live in apartment housings, and the ratio of it is increasing, compared to detached housing. However, when we look at the vacancy rate of apartment housings, wooden apartments, which tend to be old, have a clear higher rate of vacancy compared to non-wooden apartments. Thus, we can say that although apartment housing is gaining popularity in the city, some promotion measures to renew old apartment housing stocks is needed (Figure 7, below).

ii. Proposing System

In order to solve the two problems, we have proposed

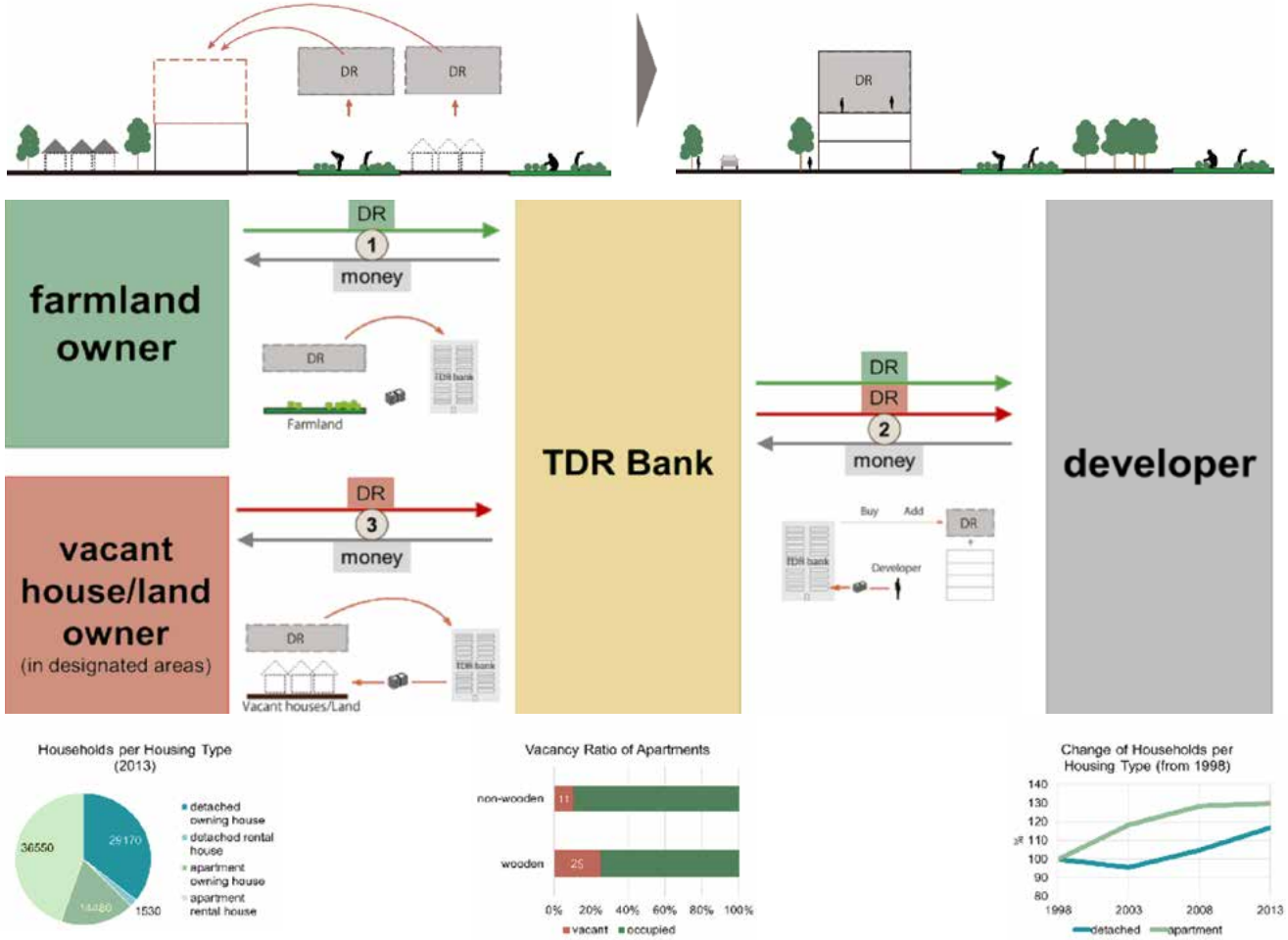



Fig. 7. (above) Scheme diagram and spatial diagram of TDR, (below) Households per Housing Type / Change of Households per Housing Type / Vacancy

a "Transfer of Development Rights" system. This system enables development rights (DR, or floor area ratio) to transfer from conservation areas (urban farmlands) to a more desired area with higher potential of development, which enables local municipalities to conserve green spaces without expenditures (Figure 7, above). Urban farmland owners can sell DR of their farmland to the TDR bank and earn a certain amount of money (1). Then, developers can buy DR on their land, allowing extra FAR on their land (2). Also, not only urban farmlands, but also land that has vacant houses but can contribute to the connectivity of green space and good landscape can also utilize this system, by selling DR with the condition of greening the concerned land (3) (Figure 7, above). From this process, DR is redistributed from farmlands or vacant houses to developers' land, and urban green spaces are conserved and increased. It is also important that the TDR bank is mediating the process with little change in their cash stock.

### *2.2.2 Urban Green Space Management System*

i. Current Problems

Another issue concerning urban farmlands is the exclusiveness of urban farming to newcomers. The current PGZ system mutually only allows landowners to operate farming on PGZs. This does not only lead to decrease of farmers and decrease of farmlands, but also generates abandoned farmlands inside the city. This is especially critical when TDR is implemented, as farmlands whose DR has been sold has no chance of development.

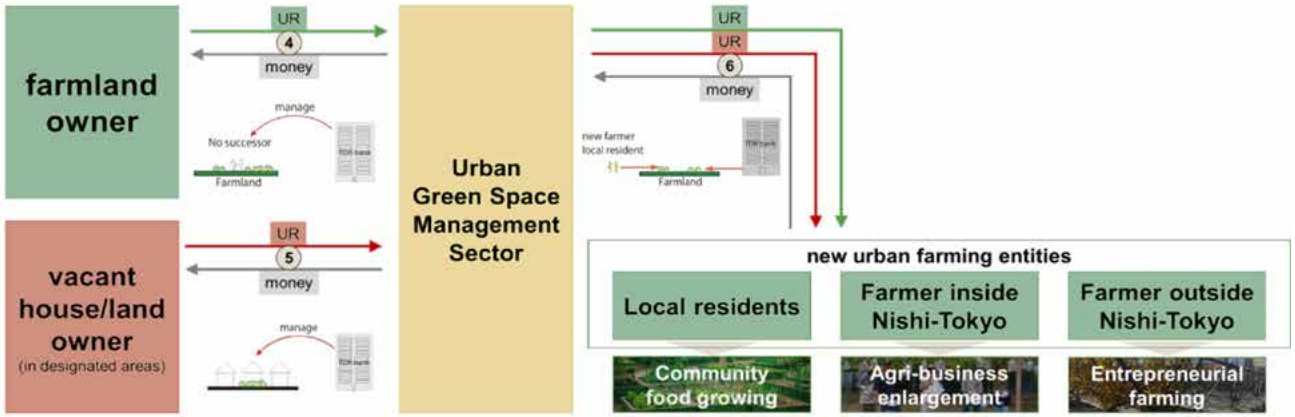



Fig. 8. Scheme diagram of Urban Green Space Management System

ii. Proposing System

In response to this situation, we have proposed a new urban green space management system that organizes management of urban farmlands in the city. The system facilitates people who are willing to engage in urban farming with urban farmlands without successors. If there are urban farmlands whose farmer has passed away and its successor does not have the intention to continue farming, the urban green space management sector buys the utilization right (UR) of the farmland and manages the farmland as green open space (4). Similarly to the TDR system, land that has vacant houses but can contribute to the connectivity of green space and good landscape can also utilize this urban green space management system, and the landowner can sell UR of the land to the urban green space management sector (5). The urban green space management sector does not manage the land permanently, but instead sells UR of farmlands to new urban farming entities (6) (Figure 8). This allows a variety of urban residents to engage in urban farming, including local residents and farmers inside/outside Nishi-Tokyo city. This will enhance community food growing, agricultural business enlargement, and new entrepreneurial urban farming.

### *2.2.3 Benefits from the Two Systems*

The two systems will benefit many stakeholders. For existing urban farmers, it provides opportunities to compensate for the expensive inheritance tax without selling their farmers. Also, they can obtain the opportunity to enlarge their operating farmlands. For new coming farmers, the system offers the chance to start professional farming inside the city area, which was mutually impossible in the current system. For the Nishi-Tokyo city government, by utilizing the system the government can preserve/create urban green spaces without huge expenditures for land acquisition, and also induce development in more desirable areas. For local residents, the residential environment with the mixture of housing and farmlands will be protected, and also the system will provide opportunities for the local residents to participate in hobby farming.

## 3. District Scale Proposal:

### *3.1 Sumiyoshi-cho: Integrating farming in daily life*

### *3.1.1 Current Condition*

Sumiyoshi-cho is a district within 500m range from Hibarigaoka station. We can see high rise apartments and shopping stores near the station, in contrast to the areas outside where many cabbage farms and ornamental tree nurseries remain along the Yato-Sumiyoshi street. This street, which is constructed over a stream, is on a relatively low land. This causes flood risks along the street, and flood mitigation by urban farmland protection is needed. Also, this street leads to Hibarigaoka station, and is used daily by local residents. There is an arterial road recently constructed on the south of the district, and there is a plan of another new road in the district from north to south. However, the wide arterial roads do not fit into the landscape of the district, and is decreasing the connectivity of green spaces.

### *3.1.2 Proposal*

In the proposal, we cancelled the current arterial road proposal and decided to widen existing roads (Figure 9). Also, by implementing the TDR system, we are going to preserve the existing urban farmlands and open them for the public ("Edge Farm"). The FAR from the urban farmlands will be redistributed along existing arterial roads, and new affordable apartment housing will be built. Along the Yato-Sumiyoshi street, local residents can purchase and cook vegetables that they purchase from local farmers. Also, residents can purchase vegetables at wholesale price directly from the farmer. Along the existing arterial roads, we will develop a green laneway that residents can enjoy (Figure 10).

This edge garden concept will increase opportunities for local residents to interact with local urban farmlands. Local farmers will obtain more chances of selling their products to the local residents, and their agricultural business will be more stable.

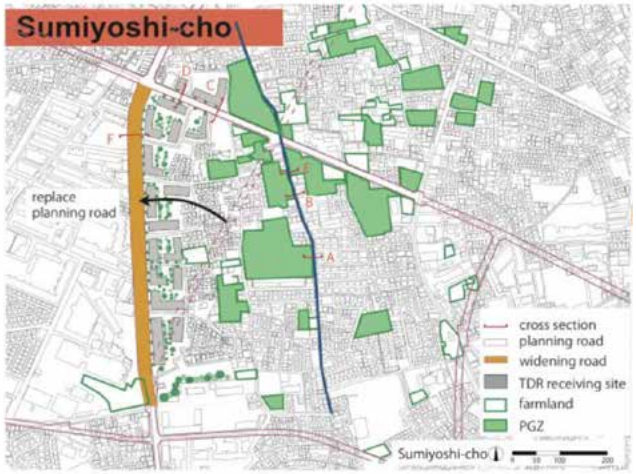



Fig. 9. Proposed road network for Sumiyoshi-cho

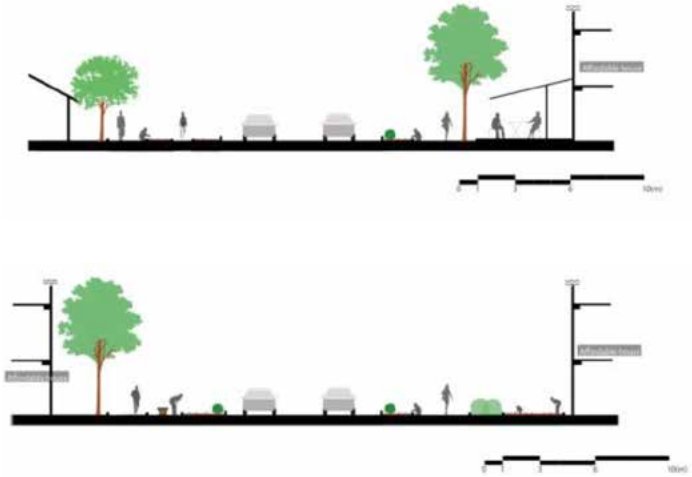


Fig. 10. (Above) Current and (below) Proposing Cross-Sectional of Arterial Roads in Sumiyoshi-cho

### *3.2 Mukodai-cho: Sustainable Integration through Regeneration*

#### *3.2.1 Current Condition*

Mukodai-cho area's development was formed between post-WW2 to 2000's. The characteristic of the area is the availability of natural elements like Shakujii-river, Tamako-cycle path, and the big Koganei Park additionally, a significant number of nurseries and PGZs which makes this area greener and environmentally sound. Despite having these all natural elements some connection between them is missing which can be combined or interconnected with each other as well as with surrounding communities. Moreover, city government's new plan of making arterial roads will completely ruin the Tamako-cycle way and intersect 4times with Shakujii-river thus makes the scenario worse. So, our aim was to make some proposals regarding some better alternatives of above complications.

1. Modify the arterial roads to reduce the intersections with Shakujii-river and make an alternative of Tamako-cycle path by using existing road widening proposal.
2. Revitalizing the Shakujii-river which is now the back side of city by TDR (Transfer of Development Right).
3. Reconnect the existing urban green space as a "green corridor".
4. Propose different use of vacant lands/plots.

#### *3.2.2 Proposal*

Figure 11 shows how the shifting of arterial roads can avoid the interaction of river and provide potential Transformation of Development Right area alongside of river especially on North-East & Southern part.

TDR will shift to the North-Eastern part where currently an old public housing area exists and on the Southern part where farm, river, garden of the Danchi exists. Keeping this farm by TDR, making new arterial road (28M wide) subsequently improve the riverside, adding value of farmland as well as a quality life in Public housing.

Instead of constructing Tamako-cycle way as a vehicular way, existing roads will be used to reduce the congestion.

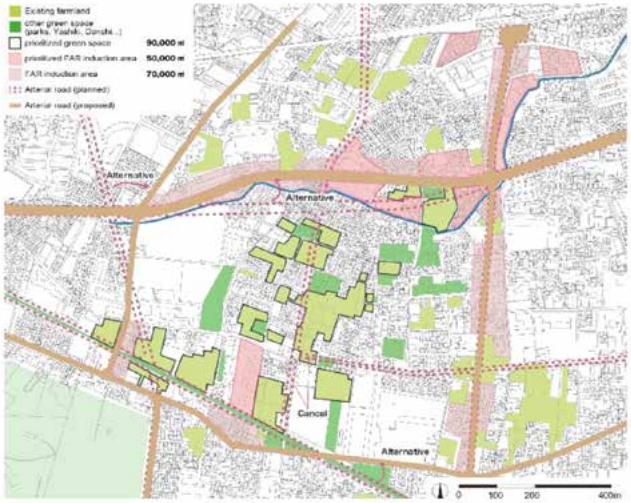



Fig. 11. Proposed road network for Mukoudai-cho

However, widening is necessary for that but still it will be less expensive in terms of financial aspects and less PGZ & farmlands will affect. Regardless the coexistence of green space (Farmlands and PGZ) and local people, that could not make the relationship because of the disconnection among them by fencing. Our aim was to connect the existing nurseries and make a green corridor between those. It will be a non-motorize alternative way from TDR prevailed public housing to Aozora Park & Tamako cycle path. Furthermore, it can be used as a learning alley to kids when they cross through the corridor.

During festivals and holidays farmers markets alongside the Tamako cycle path will amplify the social value of the

space and create a sustainable environment among the community. Because of the depopulation the number of vacant plots will increase in future so either the city government can buy vacant lots and renovate or sell

Fig. 12. Green Corridor

development right of this land and earn money. This land will function as:

- Community space for residents
  (such as park [Option 1] or sharing farm [Option 2])
- Rain water management facilities during heavy rainfall.
- Firebreak belt
- Potential for Nurseries.

By doing this, we can realize:

- Making new open space for community people
- Changing dead end street to a new pedestrians' path
- Separation of automobiles' and pedestrians' path
- Making connection among greens and waters
- Disaster mitigation (flood & fire spreading)

**4. Conclusion:**

Our studio's fundamental concern was to address the strength of the Nishi-Tokyo as a suburban city as well as its current & upcoming threats which it will going to face in near future. According to that we suggest some proposals to mitigate those problems in a sustainable manner and represent the city Nishi-Tokyo as a new place of Living with Green.

Fig. 13. Section of the Green Corridor

Fig. 14. Tree nursery.
*(photo: A. Murayama, 2017)*

# The Joint On-site Workshop

*A. Murayama, A. Iida*

"Nishi-Tokyo Studio: Shaping Ecodistricts in the Tokyo Suburbs" is an urban planning studio jointly organized by the Department of Urban Engineering, the University of Tokyo (Japan) and the Interuniversity Department of Regional and Urban Studies and Planning, Politecnico di Torino (Italy). The studio is a part of the project "Implementing the United Nations' New Urban Agenda. Universities in action (UNI-NUA)". From March 5 to 10, 2018, graduate students from Politecnico di Torino and the University of Tokyo met in the on-site workshop in Tokyo to discuss and further develop the analyses and the proposals made in advance - The University of Tokyo: Studio Work in Urban Development 3 and 4 (A1A2, 2017) and Politecnico di Torino: Master Thesis Atelier - Planning for the Global Urban Agenda. On-site visits and participatory meetings were organized in collaboration with the Urban Planning Committee of Nishi-Tokyo City.
Participants had opportunities to learn and discuss about urban farmland conservation, planning and development of arterial roads, housing and development trends, new suburban lifestyle, etc. in Nishi-Tokyo where "sprawled" urban areas with a mix of agricultural and residential land uses supported by minimum urban infrastructure are formed. The proposals for shaping ecodistricts were to be made in multi-scales: citywide, district and site. The output of the workshop was presented in Nishi-Tokyo City and will be considered in the sub-committee of Nishi-Tokyo City Planning Committee responsible for creating broad policies and models to balance urban development and farmland conservation.
The program of the on-site workshop was as follows:

- Kick-off and site visit;
- Meeting with staff of Nishi-Tokyo City Planning Division;
- Grouping, site analysis and drafting proposals;
- Interim presentation and discussion;
- Seminar "Policies and Planning for Shrinking Cities -Torino, Italy-";
- Final Presentation at Tanashi Branch, Nishi-Tokyo City Office;

The final presentation started with the greeting from Mr. Kouichi Maruyama, the mayor of Nishi-Tokyo city. He mentioned that Nishi-Tokyo City is the member of the Alliance for Healthy Cities, an international network aiming at protecting and enhancing the health of city dwellers. The Healthy Cities approach was initiated by the World Health Organization to cope with the adverse effects of an urban environment over health. He emphasized that holistic approach to connecting water and green including urban farmlands is essential in creating a healthy urban environment. Then, Akito Murayama as the coordinator of the workshop introduced the overview of the Nishi-Tokyo Studio in relation to the issues on urban farmland conservation in the city and to the efforts of Nishi-Tokyo City Planning Committee actively considering the solutions. After the presentations from the students, there were active discussions. Professor Miki Yasui, the chair of Nishi-Tokyo City Planning Committee emphasized that she would like to see some of the proposals come into reality. She

also asked students about their impressions on urban farmlands in Nishi-Tokyo City and the first step to realize the proposals. The students answered that farmlands in Nishi-Tokyo City are situated in highly urbanized situation and are not only for productive agriculture by farmers but also an important part of civic life in the form of community farms and direct selling markets. The first step towards realization would be the initiatives by associations with the support of the city government and the concepts of SDGs and New Urban Agenda. Professor Claudia Cassatella added that various ecological services of urban farmlands including disaster mitigation, urban environment, food production and biodiversity are considered important in Europe, and emphasized that multi-disciplinary approach combining urban planning, landscape planning, housing policies, transportation policies and tourism is needed. Other members from the City Planning Committee also raised issues such as the design of urban rivers and the abandonment of some urban farmlands. Professors Claudia Cassatella and Marco Santangelo referred to the situation in Torino including the change of civic minds towards urban farmlands and the importance of transformation of not only abandoned farmlands but also brownfields. Nishi-Tokyo Mayor's Diary (March 10, 2018) says "Presentation of the International Urban Design Studio by the University of Tokyo and Politecnico di Torino: The mayor attended the studio presentation by the graduate students from the University of Tokyo and Politecnico di Torino regarding the conservation of productive green zones in the city. It was a valuable opportunity to listen to fresh ideas from Japanese and Italian students."

The map shows each student home country.

# Field visit and interviews

*J. Lichten*

On the first day of the joint workshop, we visited Nishi-Tokyo to explore the landscape and interview stakeholders. Much of our analysis into Nishi-Tokyo's assets and challenges on the following pages was based on this visit and our previous analysis. We focused on two neighborhoods, each reflecting different forms of urban design in Nishi-Tokyo necessary to the proper design of an eco-district.

The first neighborhood visited, Mukoudai-cho, contained comparatively higher population density, reflected in closer-built housing and a series of low-rise apartment blocks with scattered plots of green space in between. We took note of the advanced age of many buildings, including multiple apartment blocks under renovation to add elevators. Nestled between the neighborhoods were several commercial tree nurseries, creating an "urban forest" within the residential areas.

Within the Mukoudai-cho area was the Shakujii river, and much of our observations centered on this unique asset. We noticed, however, that the river itself has been narrowed with concrete walls, is covered with metal beams obstructing the view, and has little room for walking alongside it. We saw the river's potential as a relaxing green path integrated into the neighborhood streetscape, unrealized in its current state. After lunch, we traveled north to Sumiyoshi-cho, a more spread-out neighborhood with multiple farmers in close proximity. We conducted interviews with two farmers in the area, both of whom were the latest generation of families which had worked their land for hundreds of years; both farmers were some of the last remaining in the city.

Our first meeting was with a local farmer, Farmer A, who had recently sold a significant portion of his family's farmland to private developers, to pay for a large inheritance tax burden charged when he received the land from relatives. Unlike a large portion of farmland in Nishi-Tokyo protected as "productive green zones", Farmer A's family does not receive this protection due to how he makes use of the land. While Farmer A does sell his own vegetables to the neighborhood at a stand onsite, he also rents one third of his farmland to local residents as a community farm, and also teaches farming on another small section, and these two activities prevent him from having his land designated as tax-exempt. One of his hopes was for the legal regulations stipulating what he can and cannot do as a farmer, with his farmland, would be loosened, to allow him to practice these different kinds of agricultural business more freely.

Farmer A's activities to promote farming in the area are extensive: he hosts lectures twice a month on agricultural technique, he organizes the group of community farmers who work on his land, and he participates in a local agricultural committee affiliated with the city government. Despite all this activity, he earns the majority of his income not through agriculture, but through rent on a nearby piece of land he owned, rented to a supermarket. His activities in farming were more related to maintaining the history of agriculture in the area, and providing the means for his neighborhood to participate in those activities.

The second interview took place with a younger couple, Farmer B and his wife, who had taken over their family's farmland in the past year. We joined them in the middle of spinach harvest, talking inside one of their greenhouses. That very greenhouse, however, was set to be destroyed as part of a road construction project coordinated by the city and prefectural governments; the couple would lose 1/8 of their land to the new road. While their land had been farmed for generations within the family, Farmer B had only just started working the land in the past year, having trained at nearby areas before beginning.

Their finances were still unstable; his wife earned a significant portion of their income as a university researcher. It was still unclear for the couple whether farming in Nishi-Tokyo would provide all their necessary income, or only a small portion. For Farmer B, however, operating a farm was not primarily about income; instead, his farm gave him an opportunity to connect with his neighbors through his onsite sales stand, or when his neighbors, while on a walk, would make use of pathways through his farmland. Additionally, this family participates in twice-weekly farmers markets, and sells at special events hosted by the local branch of Japan Agriculture. Towards the end of the day, we had the opportunity to meet with officials from the Nishi-Tokyo city planning division. Officials confirmed that planned road construction came from the Tokyo Metropolitan government, from a plan formed well in advance. These roads had been prioritized and some did not yet have funding; the city could, if it desired, push the metropolitan government to fund or defund certain roads it felt were important or unnecessary. Local land use, in general, is handled by the city government, including smaller roads which do not continue into neighboring cities.

The city planning department did not have direct knowledge of farmers' support networks, but they were aware of farmers markets and agricultural promotion handled by other departments, and through cooperation with local branches of Japan Agriculture. We realized, through our meetings, of the sectionalized nature of local institutions; city planning, agricultural policy, commercial promotion, and environmental planning are all handled by separate departments, hindering the abilities of Nishi-Tokyo to create and implement an integrated development pattern.

From this full day of observations and meetings, we realized the importance of agriculture in the daily life and spatial layout of Nishi-Tokyo, even in neighborhoods such as Mukoudai-cho where dense residential development predominates. Agriculture as a part of traditional identity is an important aspect of local identity whose preservation is valued. Preservation of this agricultural land and lifestyle, however, requires appropriate engagement with future land-use plans on an integrated level, and engagement with local farmers as stakeholders.

Joint workshop group during the field visit and the interview of some farmers in Sumiyoshi-cho.
*(photo: G. Cotella, 2018)*

# Citywide analysis and proposals

*A. Valle, G. S. Principe, F. Letteriello, L. Costa, J. Lichten, D. Mason, K. Kurimoto, K. Miura*

The proposed urban planning strategy, facing both the international challenges presented by the UN New Urban Agenda and the local issues related to a city located in one of the largest metropolitan regions of the world, focuses on: preserving and valorizing green areas and infrastructure, creating attractive urban spaces and developing a disaster-resilient city.

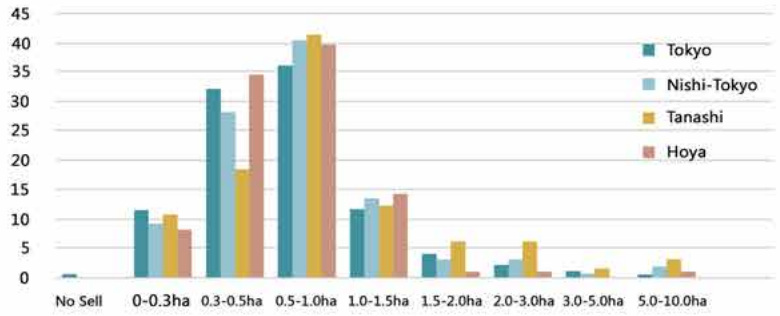
The transition toward a sustainable city has to consider the opportunities existing in Nishi-Tokyo City but also foresee future social and environmental problems. For this reason, an appropriate city-wide strategy is necessary to provide spatial solutions allowing for a valorization of development impacts.

In this light, green spaces represent a fundamental component of any urban ecosystem and urban agriculture has several functions: source of fresh and safe products, opportunity for urban residents' engagement in agricultural activities, promoter of ecosystem services and also open space for disaster management. Furthermore, according to 2010 data from the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF), urban fields rank higher in terms of productive value. In the urban area at stake, farmlands constitute a relevant part of the whole green areas, but they aren't yet included in the City's Master Plan in any significant way.

In 1992, the government enacted a Law on Productive Green Zones (PGZs) to authorize municipalities to designate certain parcels of land as "productive green areas". The aim of this law is to give landowners a substantial property tax break in exchange for not developing their land. Nishi-Tokyo City stands at the rural-urban interface and the farmers have to deal with a tax system which penalizes the owner of the farmlands, that are not classified as Productive Green Zone and located in the Urban Promotion Area. Moreover, they are subject to the pressure of developers that aims at buying their land to develop new houses.

Coordination is broadly defined as the ways in which an organization communicates, engages, and partners with local and international stakeholders in an urban setting. Good stakeholder coordination can enable to contribute to the resilience and longer term development of the city. It is necessary to consider stakeholders, not merely as interested parties with demands and economic means, but also as active part in the policy-making process construction. The key players – local farmers, residents, Japan Agricultural Co-operatives and the different administrative levels responsible for planning in the framework of the Japanese spatial planning system – needs to be involved in order to explore their agendas and needs and generate ideas and measures accordingly. An inclusive decision making is intended to compare different sides and enhance human capital contributing to create and spread knowledge. But it can also be useful in solving conflicts composed by the desire to improve access in and through Nishi-Tokyo City, causing housing and green areas destruction, and also by poor integration of farmlands into the local community. It is therefore necessary to actively promote cooperation between the parties in order to produce a combined effect greater

## FARMING HOUSEHOLDS' OPERATING CULTIVATED LAND (%)

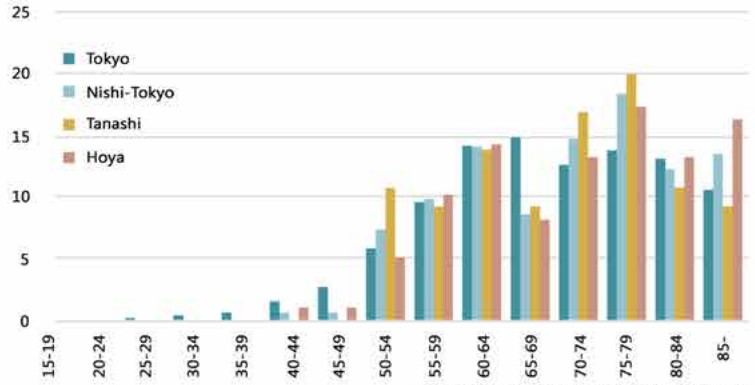



**Aging** of farmers could be a problem for **maintenance** of farmlands

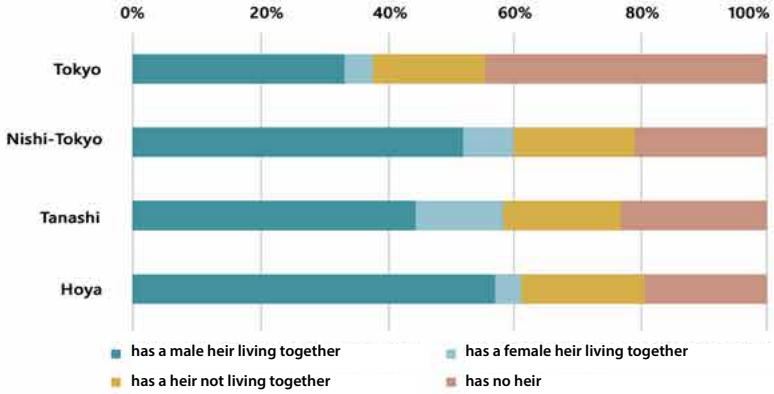
20% of farmers **have not heir**

Lost farmlands are mainly converted into **residential use**

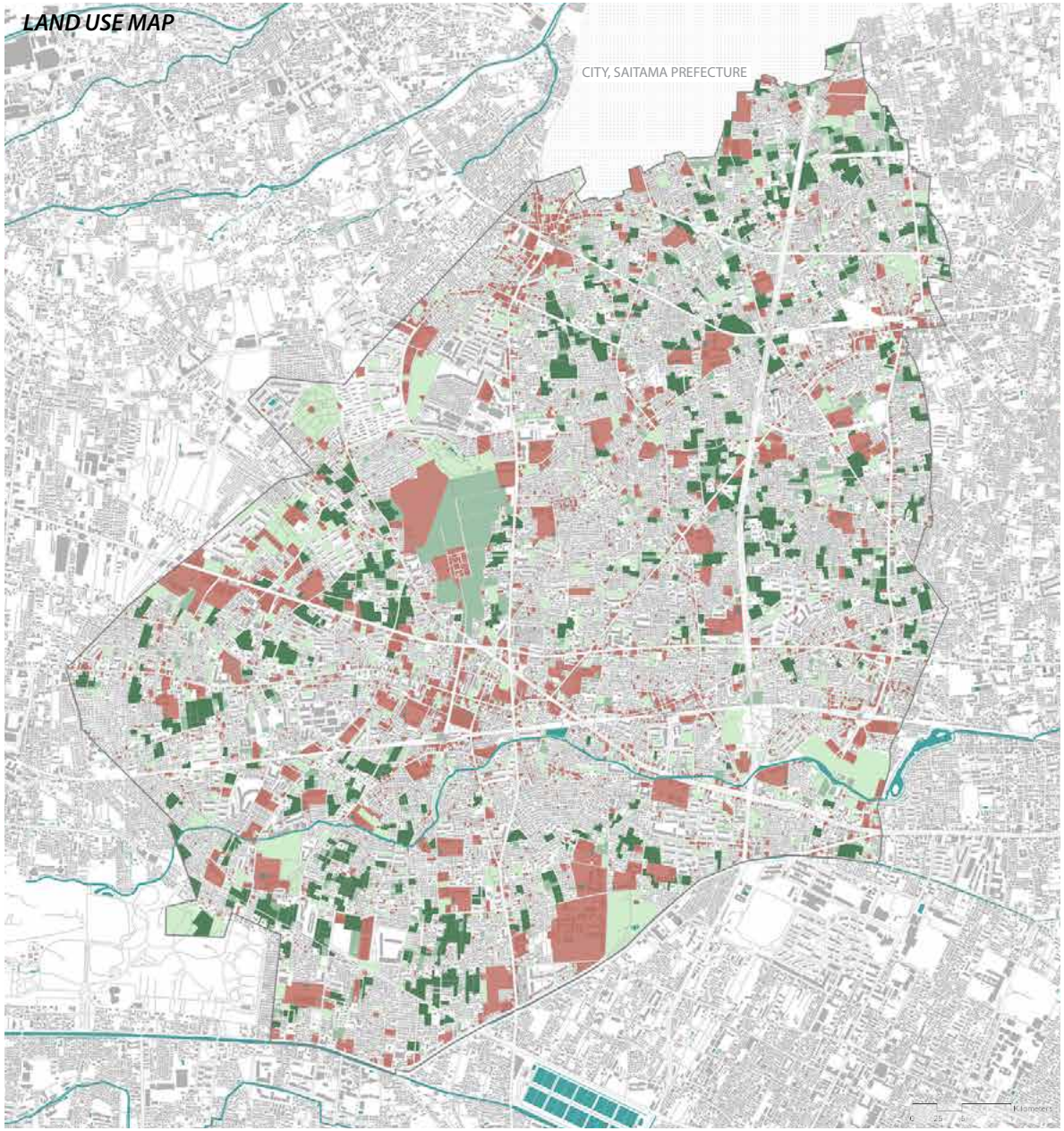
## FARMERS AGE (%)




## FARMERS WITH/WITHOUT HEIR (%)




The four graphs show demografhic, economical and social data of Nishi-Tokyo farmers.
Source: Census of agriculture and forestry in Japan (2015); Agriculture structure dinamics survey (2017)




than the sum of their separate effects: incorporating commercial farms with neighbours may maintain green spaces and meet residents' will to have farm space, reducing traffic means higher accessibility and better air quality.

Good planning has to find solutions for today's challenges but looking to the future. Following depopulation trends that suggest that development pressure will decrease after 2020, and the fundamental principles introduced in the Basic Law on the Promotion of Urban Agriculture, it is essential to preserve and emphasize the urban agriculture area present in Nishi-Tokyo City to establish new relations capable of providing food, educational and recreational services.

Through a SWOT analysis, a method used to assist

Waterway

Facilities

Green Area

Park and Garden

Farmland

Productive Green Zone (PGZ)

in recognizing strategic directions, it was possible to balance all the features of the case study. The strengths and weaknesses are determined by internal elements and they are due to the presence, inter alia, of urban green spaces and farmers' markets as resource that can be used to improve the city image and mitigate the uneven distribution of public spaces as elements that may cause shortcomings in the area. At the same time the existence of cycling paths, the possibility to use the funds from the Tokyo Metropolitan Government and the proximity to central Tokyo constitute as many opportunities; however external threats are present, such as shrinking population and changes in land use.
The examination of green areas began with their distinction on the basis of different characteristics and

Productive Green Zone (PGZ)

Farmland

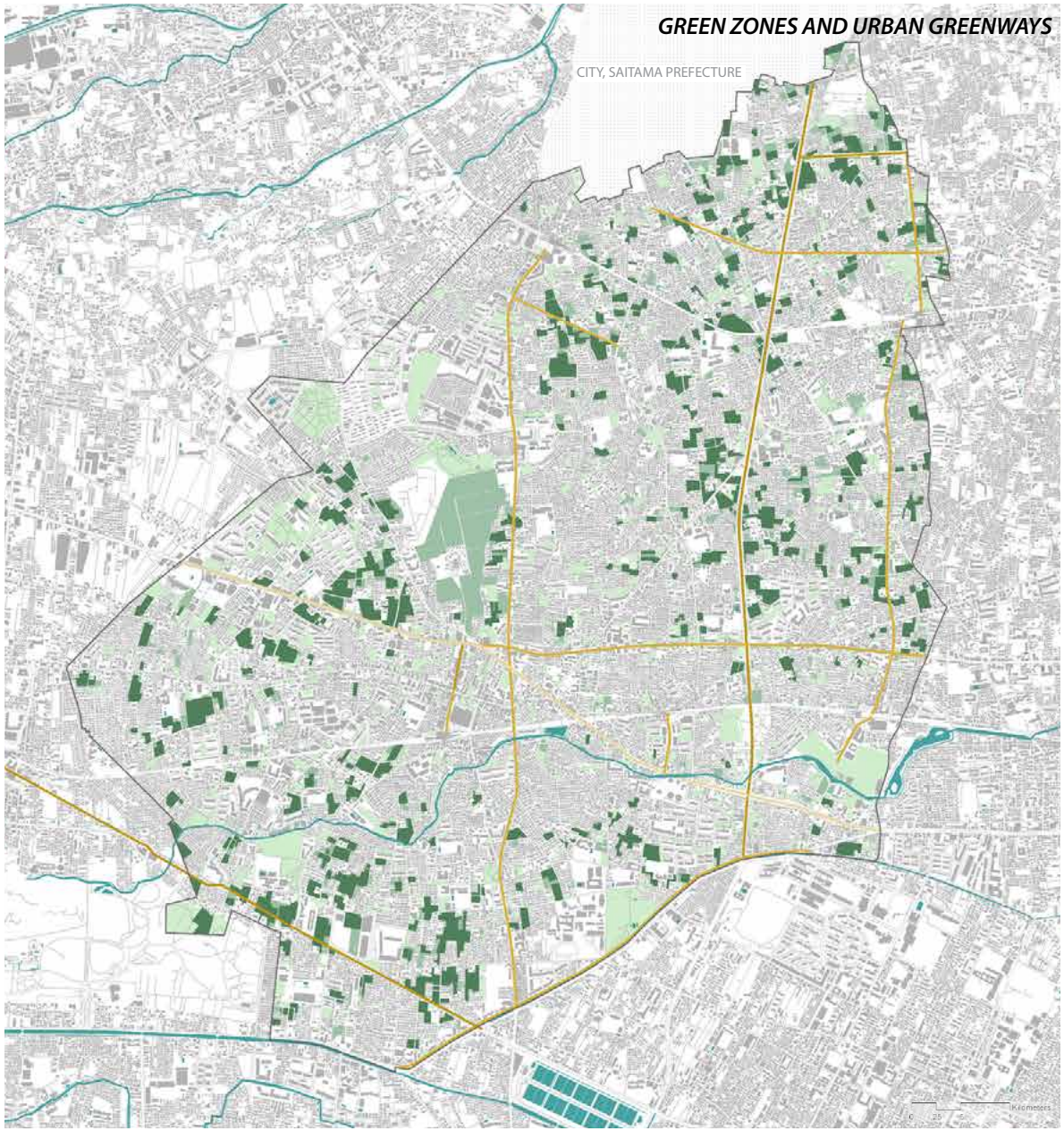
Park and playground

Cycle-Path

Dedicated

Road

Sidewalk



## STRENGHTS

Neighborhood Associations

Presence of Farmers's markets

Landmarks (eg: Tanashi Tower)

Places of worship

Presence of Urban Green Spaces
(ex: farmlands and nurseries)

Accessibility of Stations

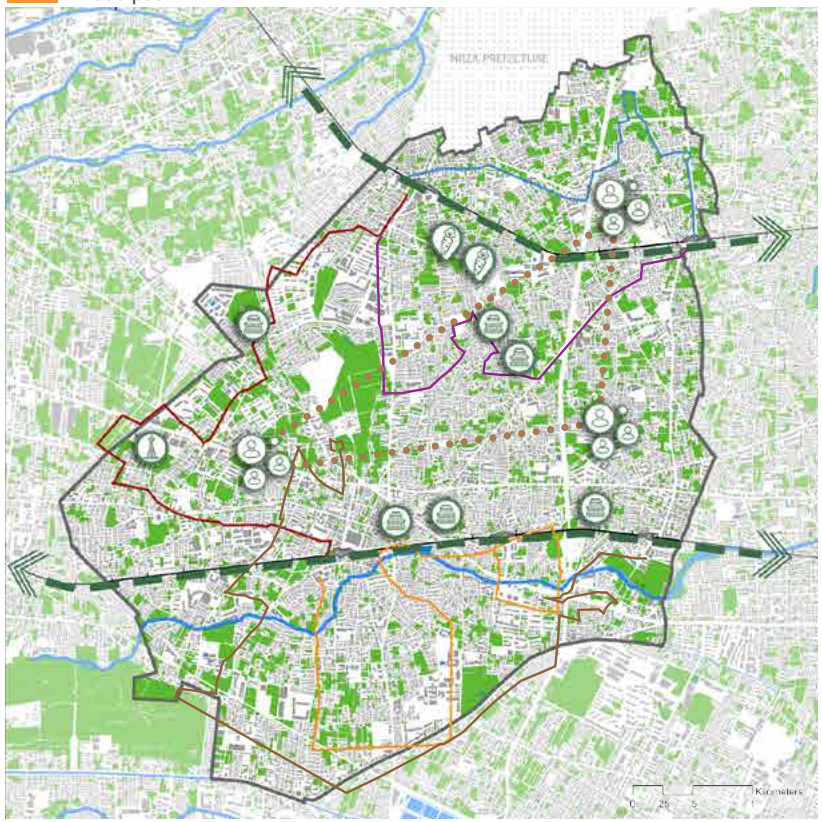
History path

Culture path

Nature path

Education path

Food path




## WEAKNESSES

Good Accessibility to the Train Stations

- Distance between Citizens & Administration
- Separation of Municipal Planning Divisions

Physical Barriers into Entry of Public Spaces

Uneven Distribution of Public Spaces

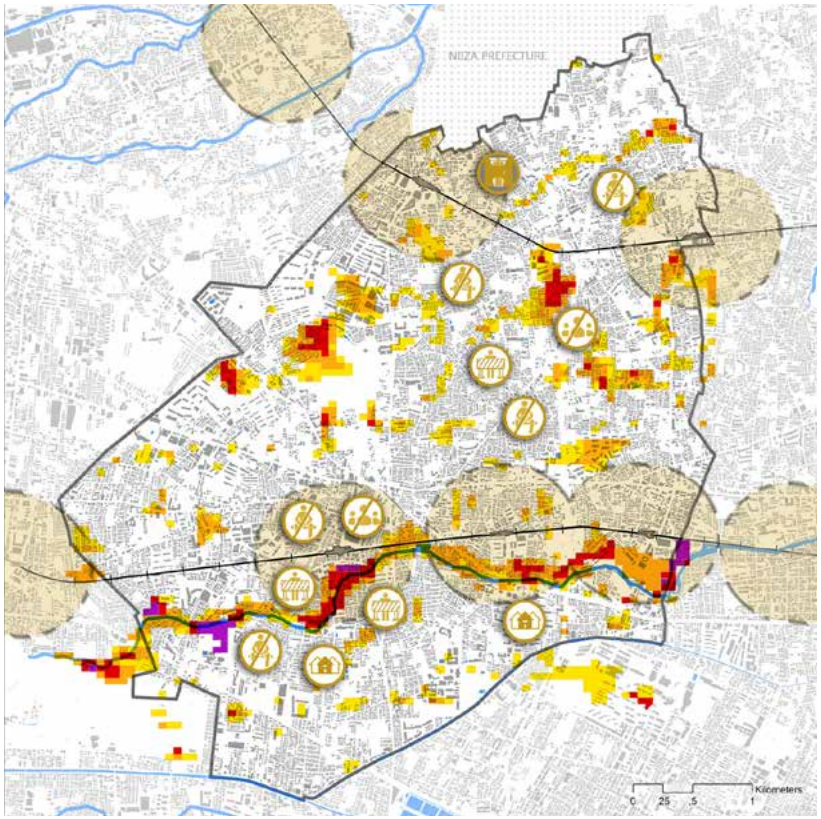
Low Quality of Social Housing

2.0 m

1.0 - 2.0 m

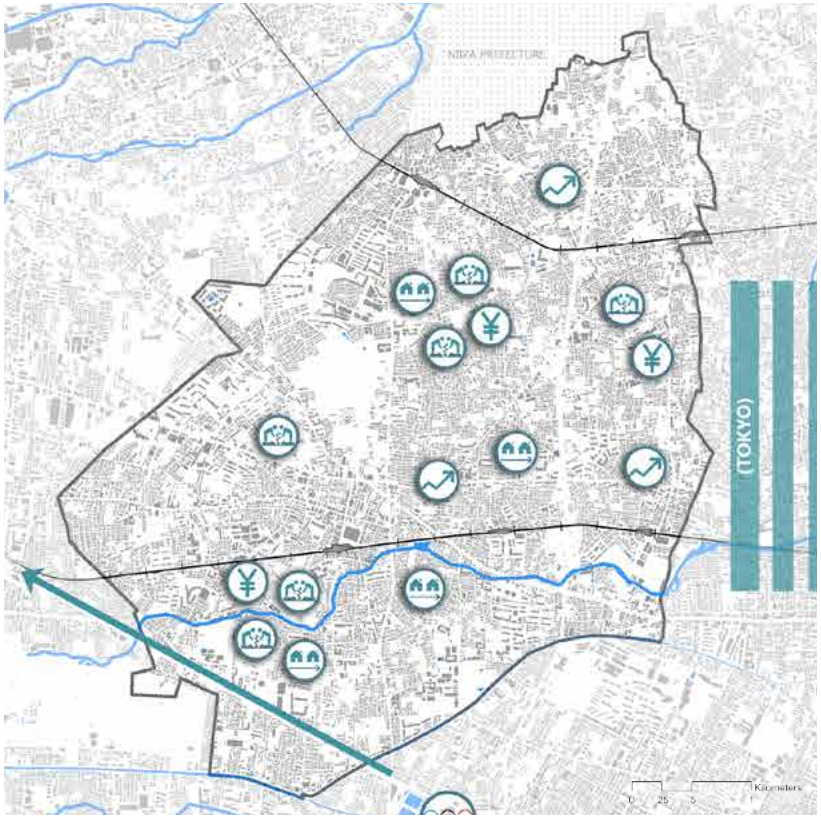
0.5 - 1.0 m

0.2 - 0.5 m



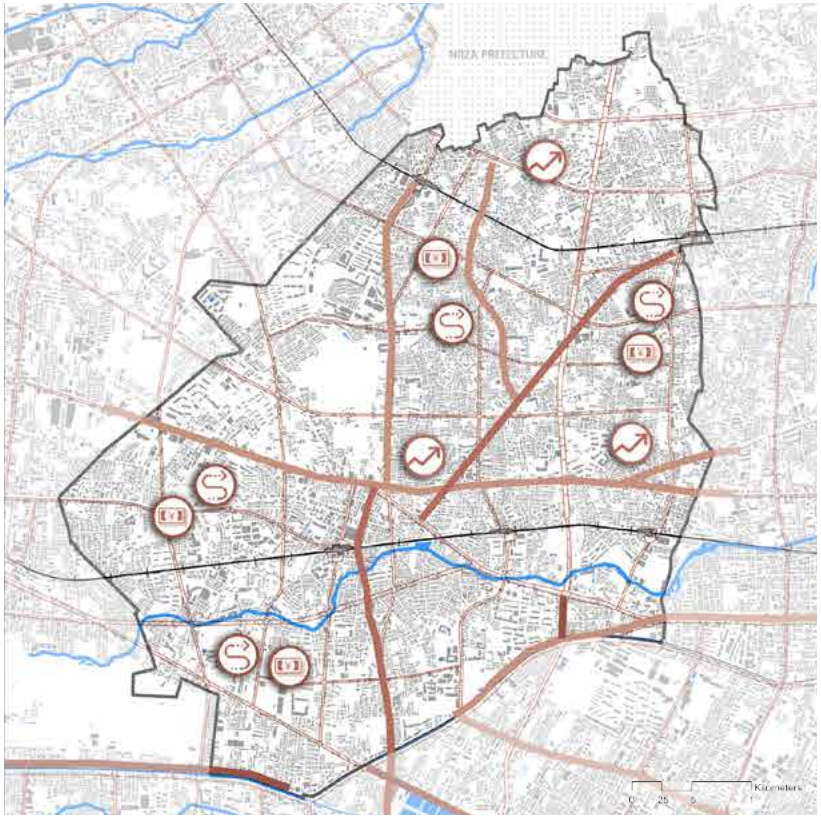
## OPPORTUNITIES

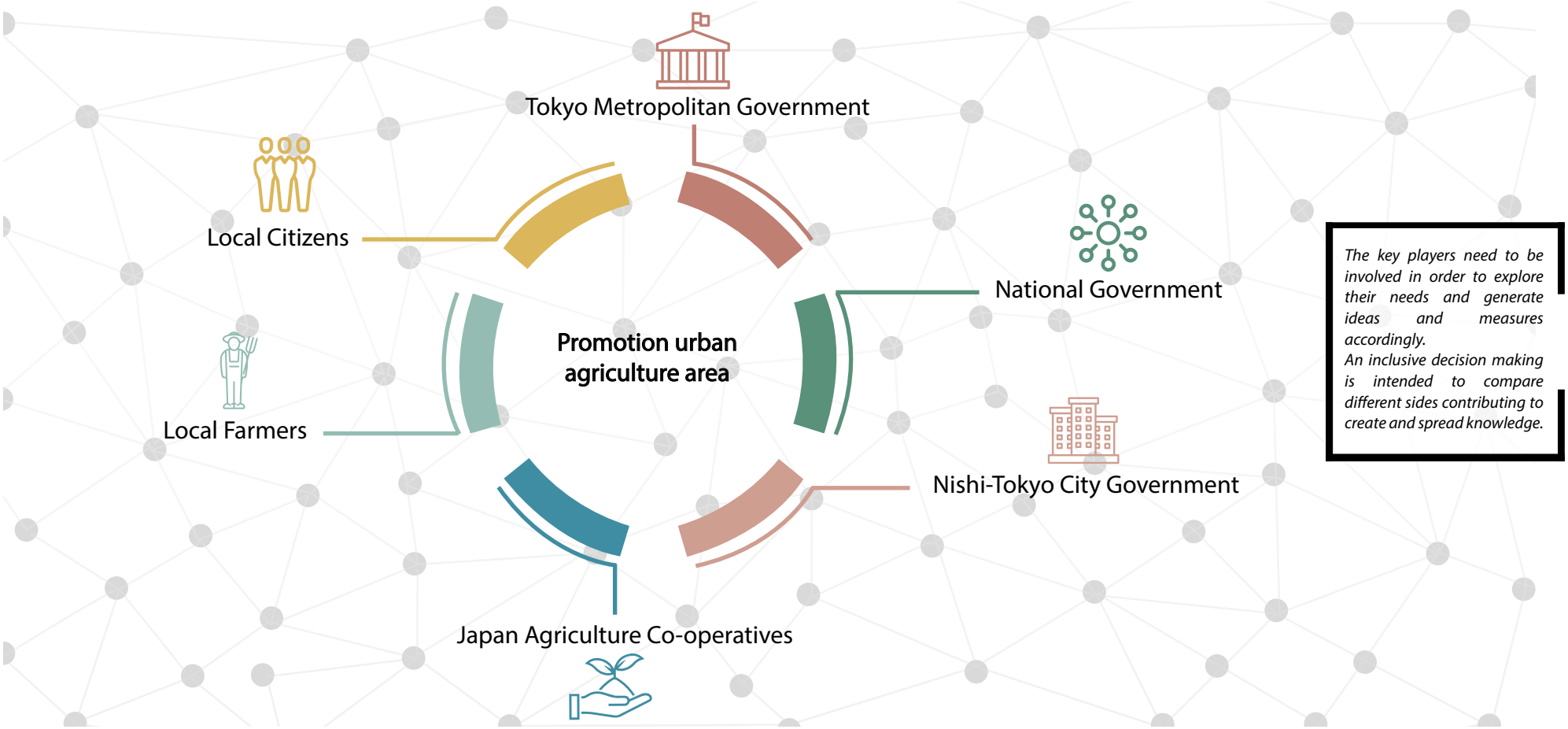
- Funds from Tokyo Metropolitan Government
- Presence of Japan Agricultural Cooperatives and Services
- Nearby Olympic Stadium
- Attractive New Homes
- Proximity to Tokyo
- Tamako Cycling Path




## THREATS

- Shirinking Population
- Changes in Land Use
- Inheritance Tax
- High congested streets
- Medium congested street
- New Road Network






*The key players need to be involved in order to explore their needs and generate ideas and measures accordingly.*
*An inclusive decision making is intended to compare different sides contributing to create and spread knowledge.*

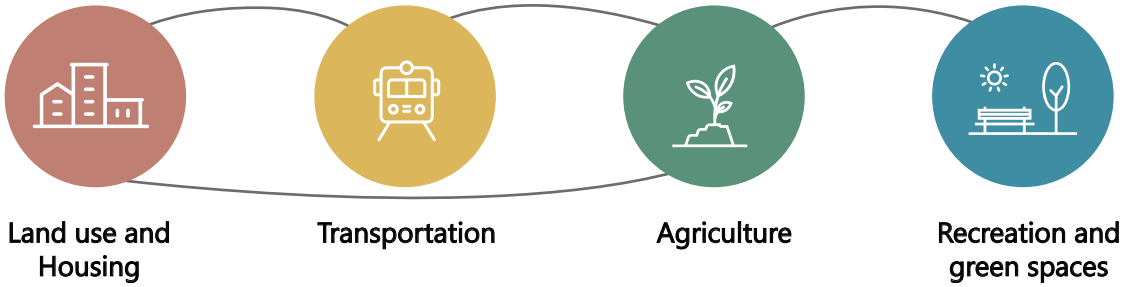
Nishi-Tokyo City stakeholder map

usage. The presence of parks and playground related to their accessibility may be considered limited but instead, if parkland and PGZs are combined, the amount of green space found in Nishi-Tokyo City is much higher, and much more accessible. That's relevant given the need for policies to conserve the PGZs and valorize them through integrated farming with neighbors, in so doing fostering green spaces' enhancement.

Looking at statistics and information from 2014 Nishi-Tokyo City Transportation Plan about road safety for driving and pedestrian, and analyzing the different types of trips in the area (car, bicycle, walking, railway, bus and other), five criteria were identified to propose road map changes: preserve PGZs and green areas, follow and widen existing roads, save taxpayer money on land acquisition, reduce spread of urban sprawl and the number of river crossings. In order to favor balanced development, innovative land use regulations for better urban planning would be essential to introduce high-rise buildings, increasing the overall density. The Transfer of Development Rights (TDR) can help to manage and redistribute farmers' development rights to respond to the demand of housing, but also transform the farmers' utilization rights, when they no longer do farming, in order to manage the farmland as green open entities that local residents and new farmers can use for urban agriculture. Certain areas are designated as "extra development area" where developers can buy FAR (Floor Area Ratio) from TDR bank and distribute it to their land up to a certain

## CONFLICTS

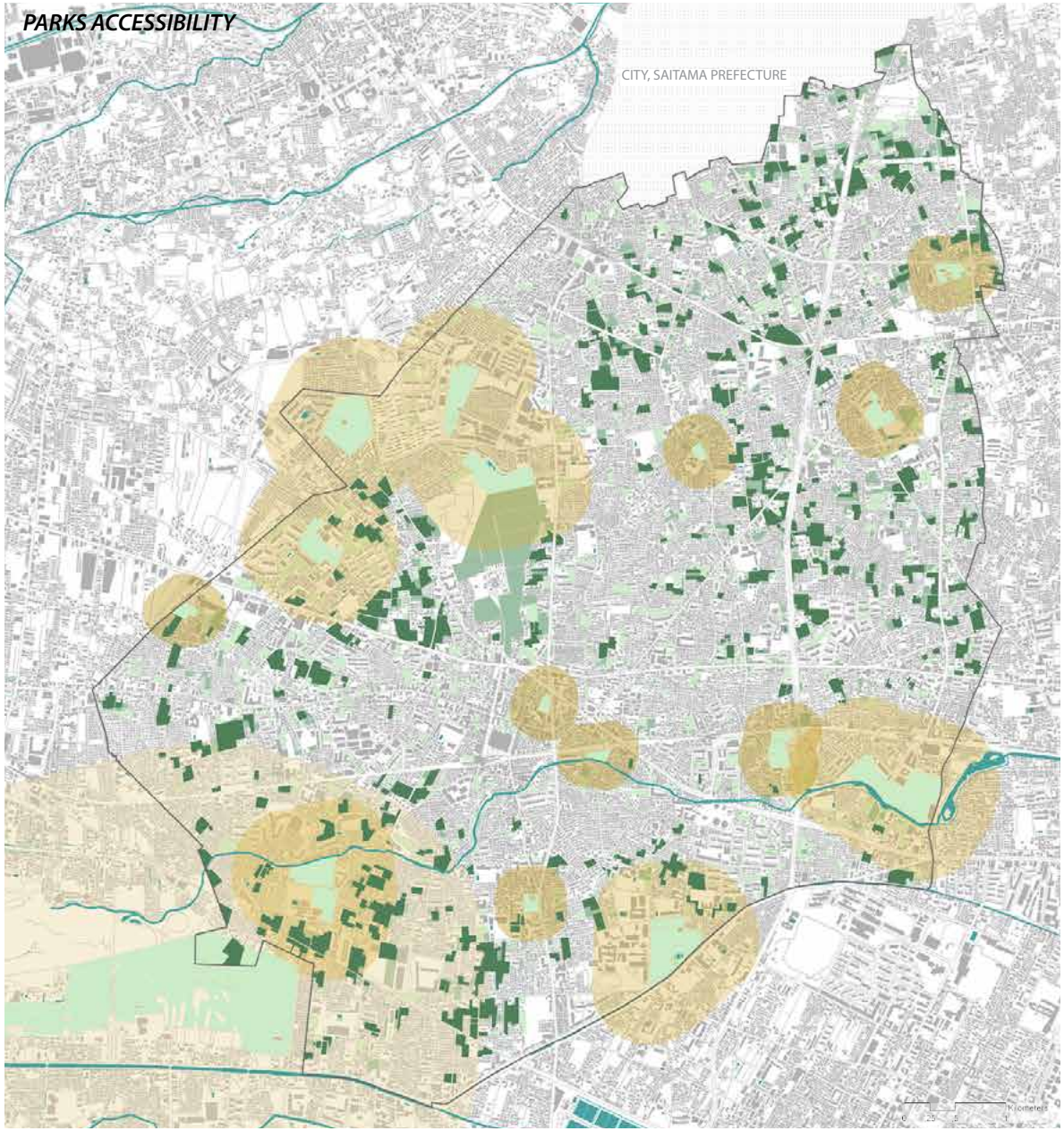
| Land use and Housing | Transportation | Agriculture | Recreation and green spaces |
|---|---|---|---|
| • Building roads destroys housing | • Commercial farms not integrated into local community<br>• Housing subdivisions destroy PGZs | • Building roads destroy PGZs | • PGZs do not count as recreational green space |




## SYNERGIES

| Land use and Housing | Transportation | Agriculture | Recreation and green spaces |
|---|---|---|---|
| • Promote housing and other building types<br>• Reduced traffic leads to better quality of life | • Reduce traffic congestion<br>• Improve access in and out through Nishi-Tokyo<br>• Residents want farm space | • Promote productive green zones<br>• Reduced transport means better air quality | • Promote and maintain green spaces - urban parks<br>• Productive green zones double ad parks |

Conflict and synergy table for the case study




limit. Urban farmlands are designated as "potential green open space area", within which the landowners can adopt the TDR system. The aim is to ensure more connectivity between road and green infrastructure and to promote a balance development which takes into account greenery, housing and facilities.

In order to give back the contents of the design vision thought for the area, considering the cognitive framework based on the above presented analysis, a strategic map has been chosen to present the results. This work seems the best to represent the chosen interventions as it acts as a voluntary, synthetic platform with no prescriptive value. It is defined by seven goals and identifies some ways of eliminating the territorial disparities, to ensure the territorial functionality,

- Productive Green Zone (PGZ)
- Farmland
- Park and playground
- Buffer zone 150 m
- Buffer zone 300 m
- Buffer zone 1 km

following up the sustainable development principles. The first goal is to improve regional transit using the existing infrastructure and promoting intermodal and sustainable transportation. Another important goal is to establish centers that increase economic vitality, also using TDR bank to preserve Productive Green Zones and densify the developed areas. Re-organize the network between green areas can help to preserve and valorize greenery but also the eco-corridors along the river. In order to create attractive urban spaces three main actions shall be proposed: encourage the connections between urban spaces with different functions, improve street design to integrate neighborhood, and helping to market and increase the value of local fresh food. After that with the use of flood land as green space and the

Productive Green Zone (PGZ)

Farmland

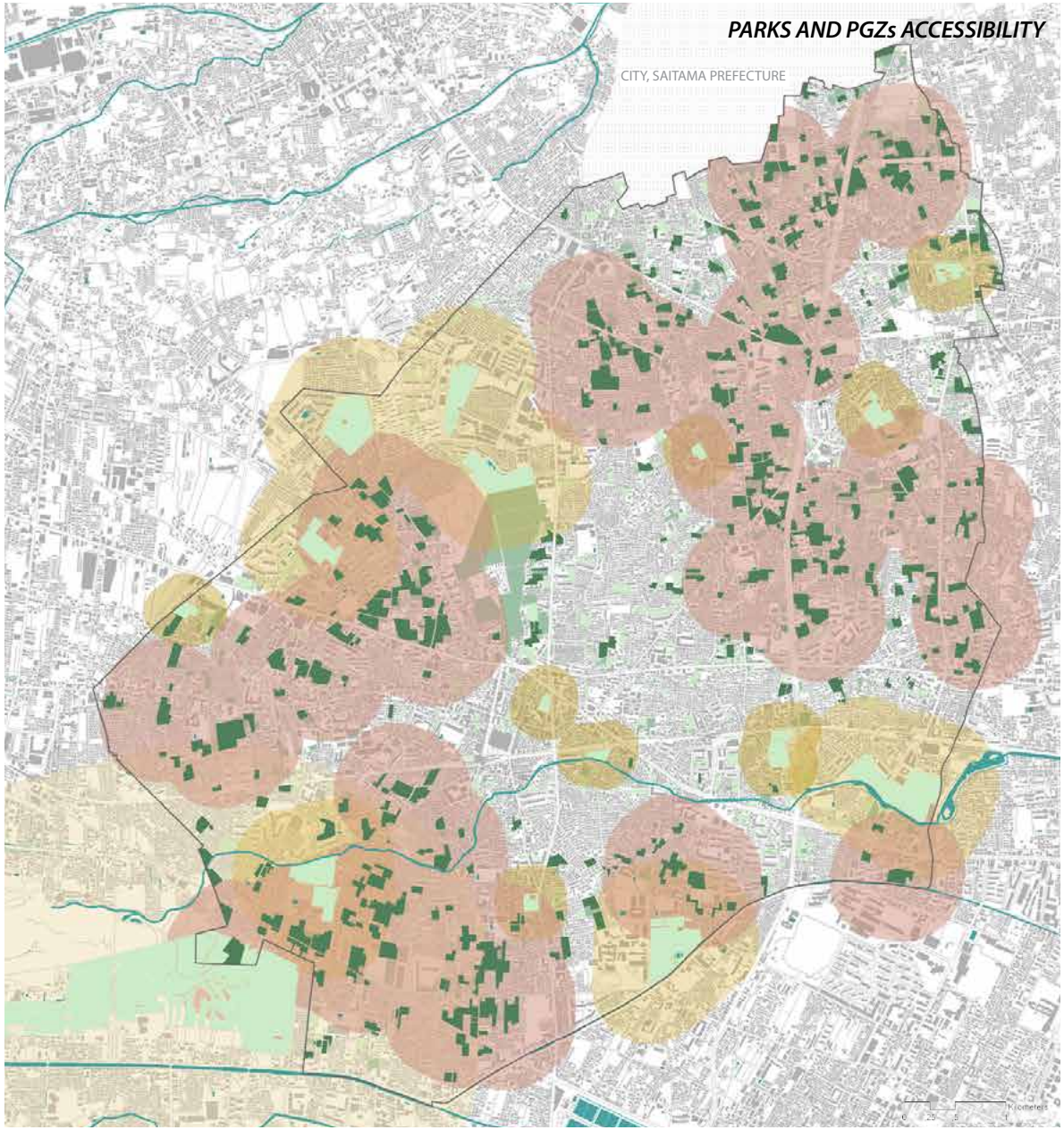
Park and playground

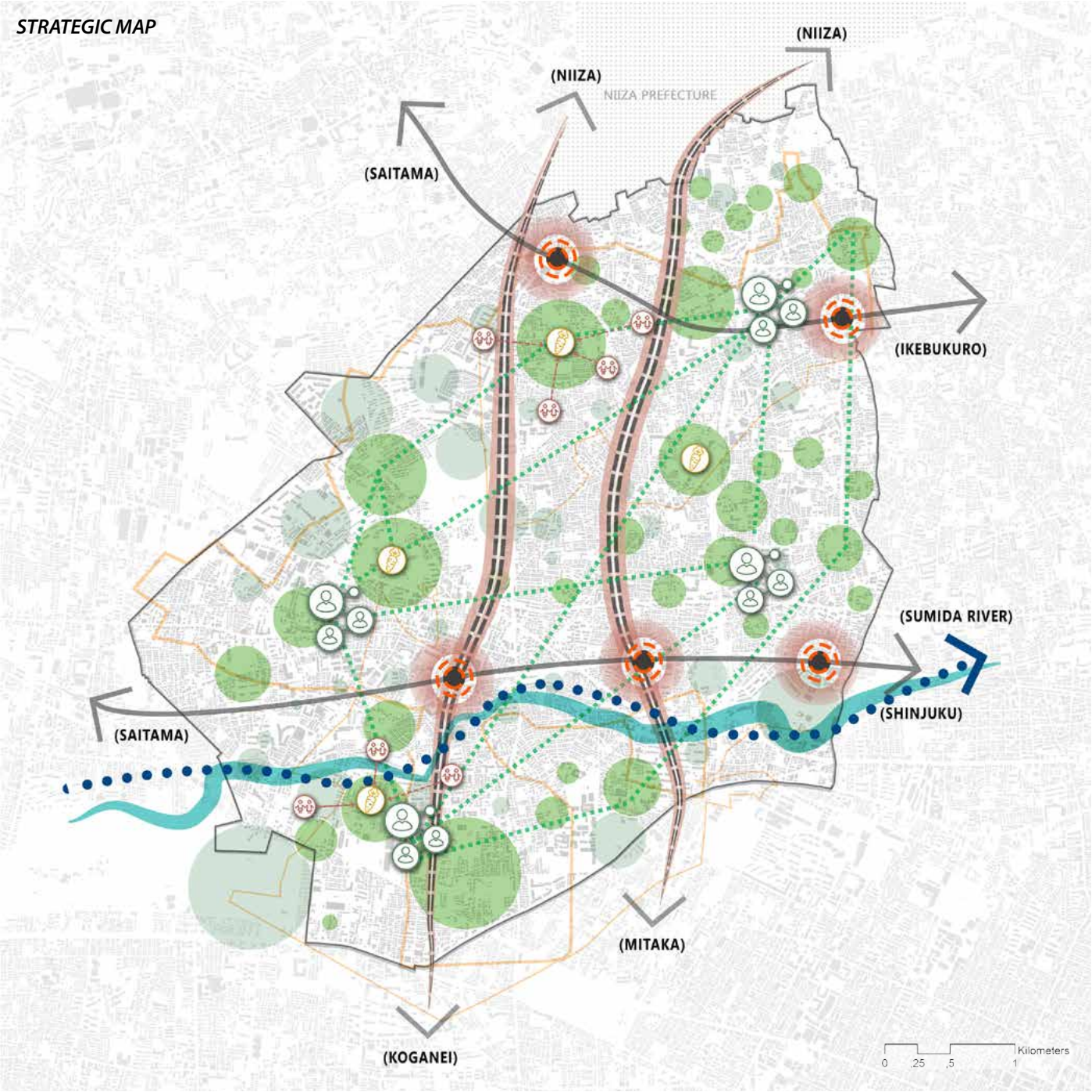
Buffer zone 150 m

Buffer zone 300 m

Buffer zone 1 km

Buffer zone 300 m






## GOALS

### 1.IMPROVE THE REGIONAL TRANSPORTATION INFRASTRUCTURE:

- 1.1 Prioritize road that reduce traffic congestion
- 1.2 Improve access in and around Nishi-Tokyo with existing infrastructure
- 1.3 Promote intermodal transportation
- 1.4 Improve road safety through pedestrian pathways

### 2. ESTABLISH CENTERS THAT INCREASE ECONOMIC VITALITY:

- 2.1 Promotion of polycentric areas of interest (stations)
- 2.2 Save Productive Green Zone using TDR Bank
- 2.3 Densification of developed zones using TDR Bank

### 3. A LOW-CARBON SOCIETY:

- 3.1 Promote walking and biking in eco-path
- 3.2 Sustainable denser low energy housing

### 4. BLUE AND GREEN INFRASTRUCTURE:

- 4.1 Preserve and valorize eco-corridors along the rivers
- 4.2 Re-organize new network between green areas

### 5. CREATE ATTRACTIVE URBAN SPACES:

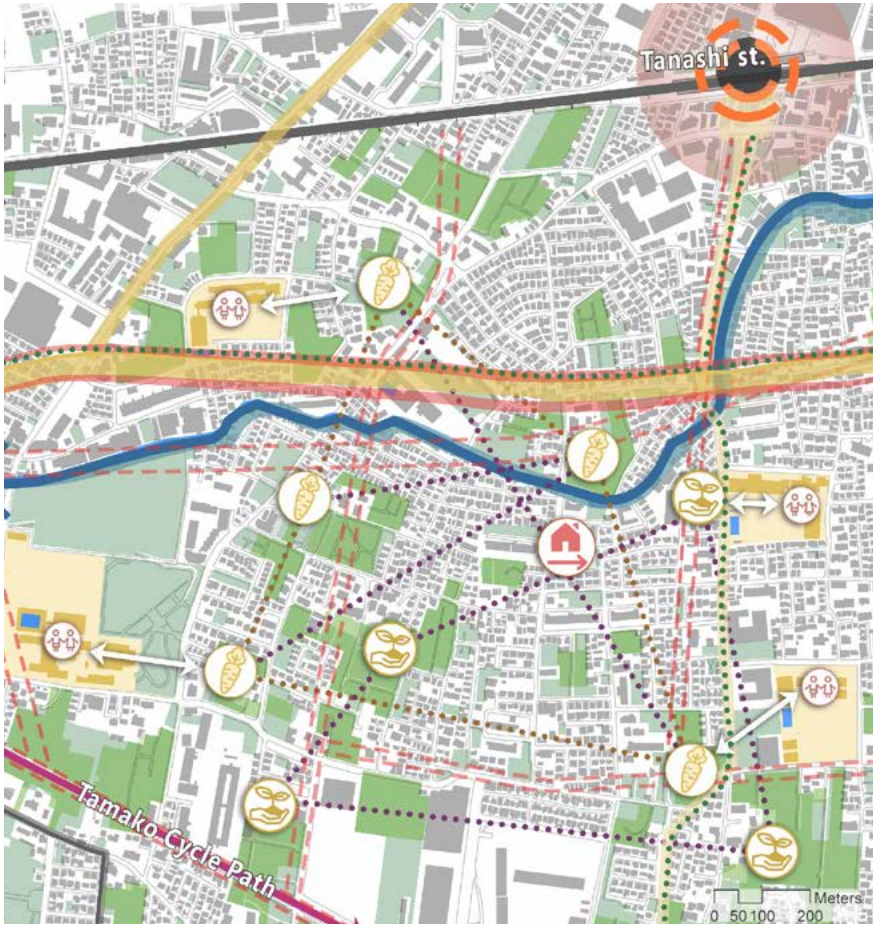
- 5.1 Promote development between green space, housing and facilities
- 5.2 Improve street design to integrate neighbourhood
- 5.3 Promote local fresh food

### 6. CREATE A HIGLY SAFE, DISASTER-RESILIENT CITY:

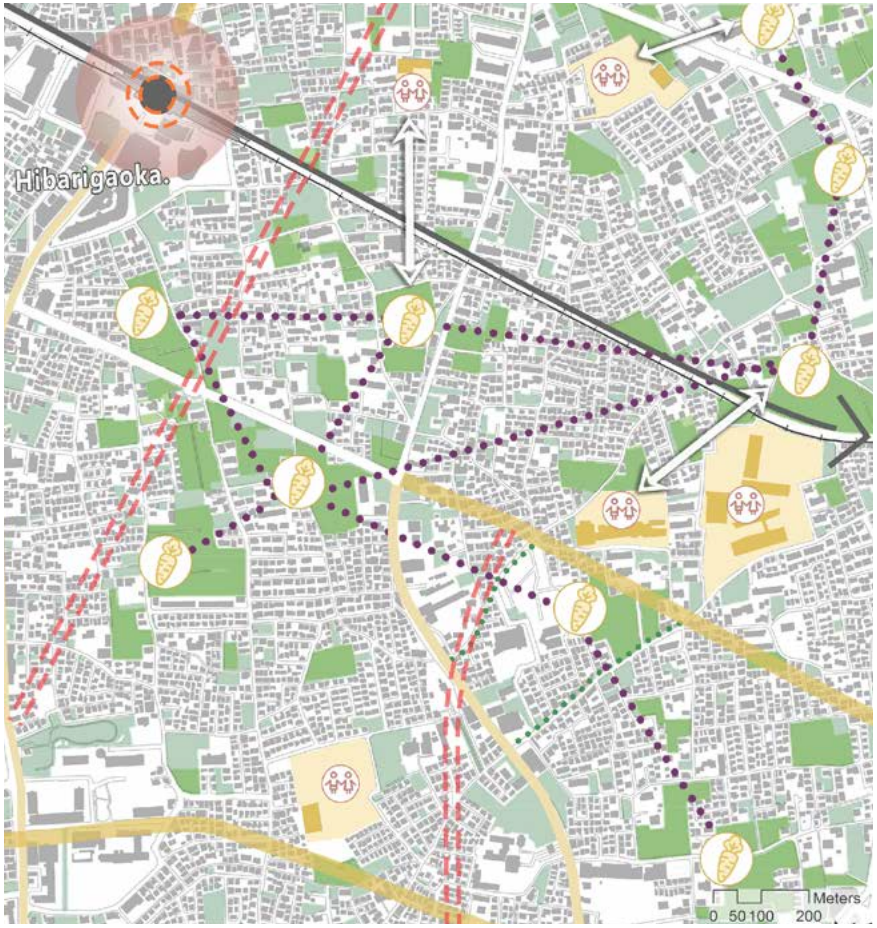
- 6.1 Increase land capable of rainwater infiltration and acquire a retention basin along the river
- 6.2 Use flood land as green space and return river to natural flow
- 6.3 Rebuild structures for earthquake hazard
- 6.4 Promote housing stock renewal to fireproof buildings

### 7. SOCIALLY INTEGRATED ECO-DISTRICT:

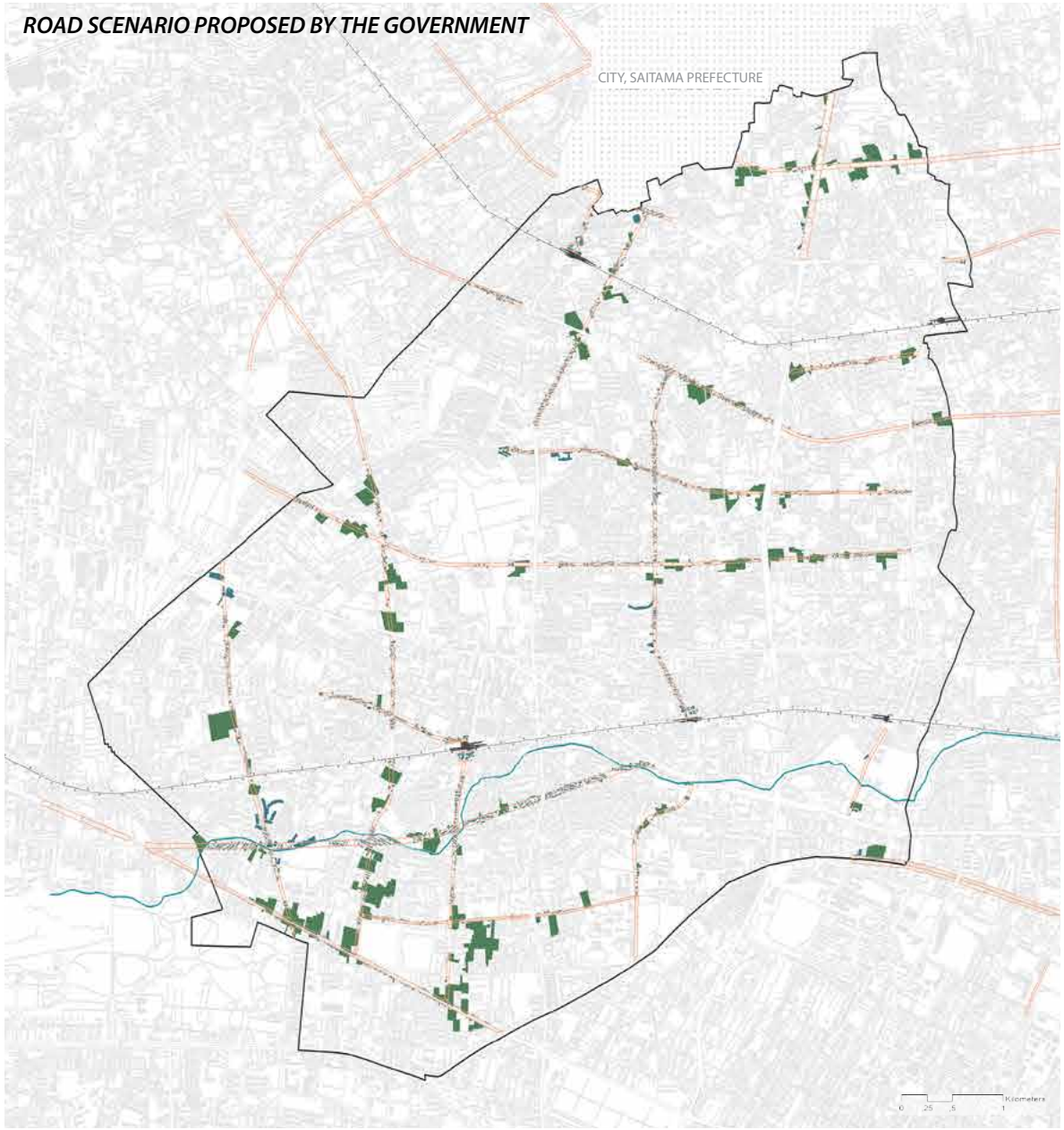
- 7.1 Foster cooperation between education and agriculture
- 7.2 Aid social integration of green zones and housing
- 7.3 Create inclusive spaces for urban life




Mukoudai-cho Focus




Sumiyoshi-cho Focus




return of the river to a more natural flow it is possible to increase the safety and the disaster related measures. Finally, the goals that look at a low-carbon society and to integrate eco-district socially become operational: with walking and biking eco-paths and the cooperation among educational and agriculture.
In conclusion, the proposal aims to place green spaces at the heart of the challenges, shaping ecodistrict in Tokyo suburbs in terms of long term vision development. Three perspectives on urban agriculture help to define different scenarios for the future of these parcels of land scattered into the area of study. Social perspective has important impacts such as inclusion, food security and community development. Then economic perspective is associated to activities that involve small-scale business, not just

Waterway

Proposed road

Building to be demolished

PGZ to be affected

food production but also flowers and ornamental plants. And then, finally, the ecological perspective involves the green spaces multi-functional character: urban greenery, keeping buffer zones free from construction and water storage and flood preservation, to name but a few. Reconsidering the road plan, with a good combination and balance between green areas and new development zones could increase interest of urban residents in agriculture and maximize ecological and social-economic benefits.

### *References*


Yamashita, Kazuhito, *The Issues in the Farmland System*, in The Tokyo Foundation for Policy Research, december 2008


Waterway

Proposed road

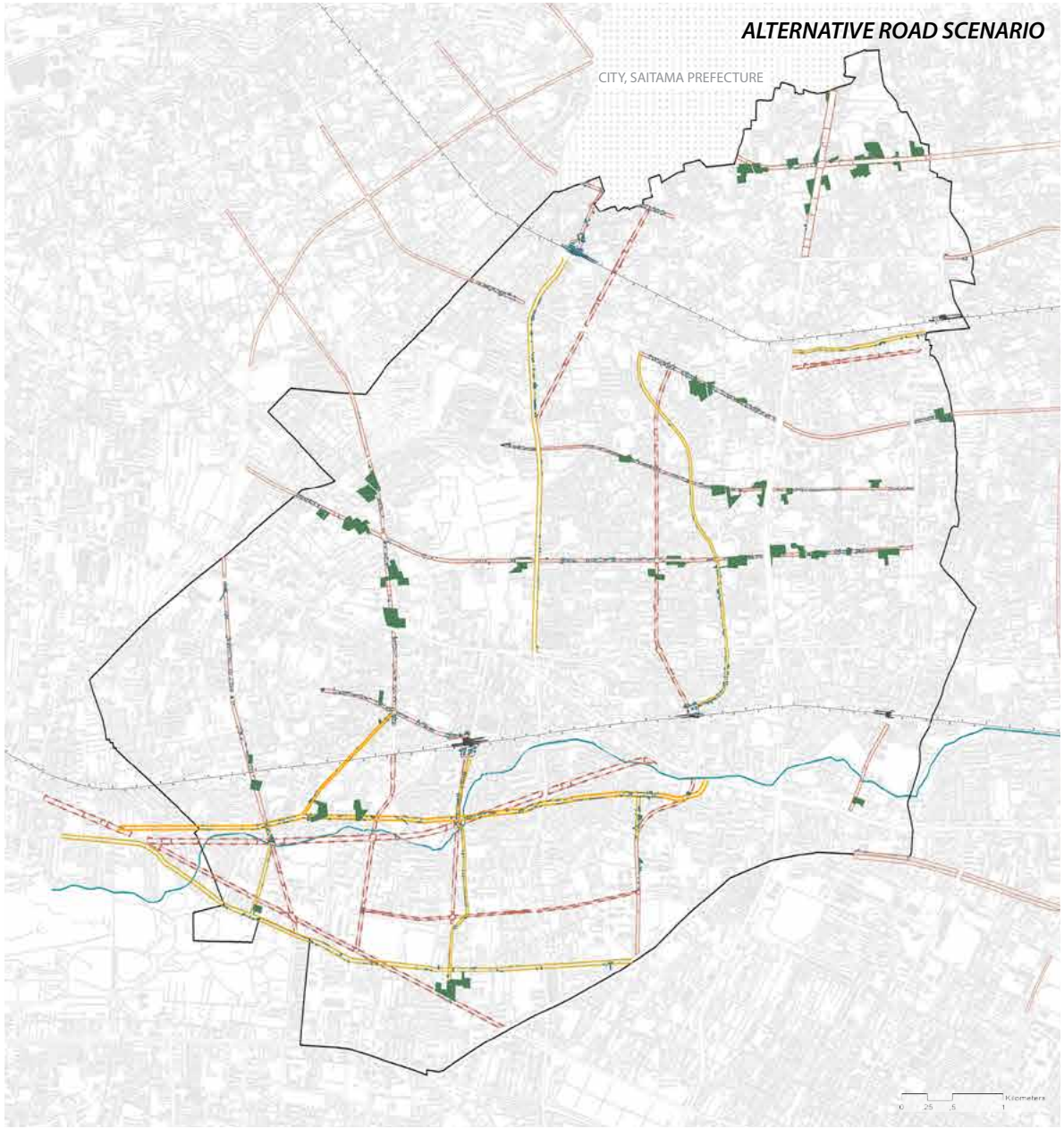
Alternative road

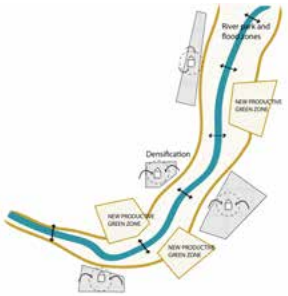
Road to be widened

Proposed road to be cancelled

Building to be demolished

PGZ to be affected






# Mukoudai-cho

*D. Najar Ramirez, A. Herrera Suarez, H. Park, I. H. Wang*

Mukoudai-cho is one of the districts of Nishi-Tokyo City, located in the south part of the city. The local government has been very involved and concerned in improving the quality of life of the inhabitants and conserving and promoting the PGZs (productive green zones) that are one of the characteristics and essence of the district.

For the proposal at this district level several aspects were taken into account, and several actions were proposed. After analyzing the area, three main problematics arose: (i) the high-risk of floods in the north part of the district, where a widening of the river area was already planned, (ii) a lack of public spaces for the community and (iii) the low quality and quantity of social housing present in the district.

First, we reconsidered the already projected redefinition of the road network proposed for the district by the Tokyo Metropolitan Government, since many of the new roads were to cross through some existing PGZs, their construction decreasing their total surface and thus contrasting the proposals and aims of the local government. Furthermore, one of the proposed roads should cross the river several times, probably increasing risks and degradation in this area. So, one of the biggest proposed changes was the repositioning of this road to the north, to have less road crossing as possible on the river and allowing for its recovery. The current carrying capacity of the river is somehow problematic, because is not wide enough to prevent flooding during rainy season and, in the dry season, it appears just as an empty and useless canal.

Considering this, we propose not just to widen the canal, but also to transform it into a public space. In this way, during the dry season the spaces along the river could be used for social gathering, leisure events and more; during the rainy seasons this area would serve as a flooding space, increasing the capacity of water storage and decreasing the actual flood risk. The proposed widening of the river constitutes only one of the elements composing a network of green spaces that characterise this area of the city, altogether developing an "ecopath" (following the same concept presented in the Sumiyoshi-cho district proposal). With the widening of the river space, new green zones would appear not only as parks, but as a new type of "Community Productive Green Zones", that would serve for volunteering and for people interested in learning about agriculture. This new area would also serve as a play space for children, to create bonds within the community.These spaces would create new interactions and social bonding between users generating a new and stronger sense of community and belonging to the place. Converting the city in a better place to live.

Second, we focused on the evaluation of the current state of the social housing projects in the district.

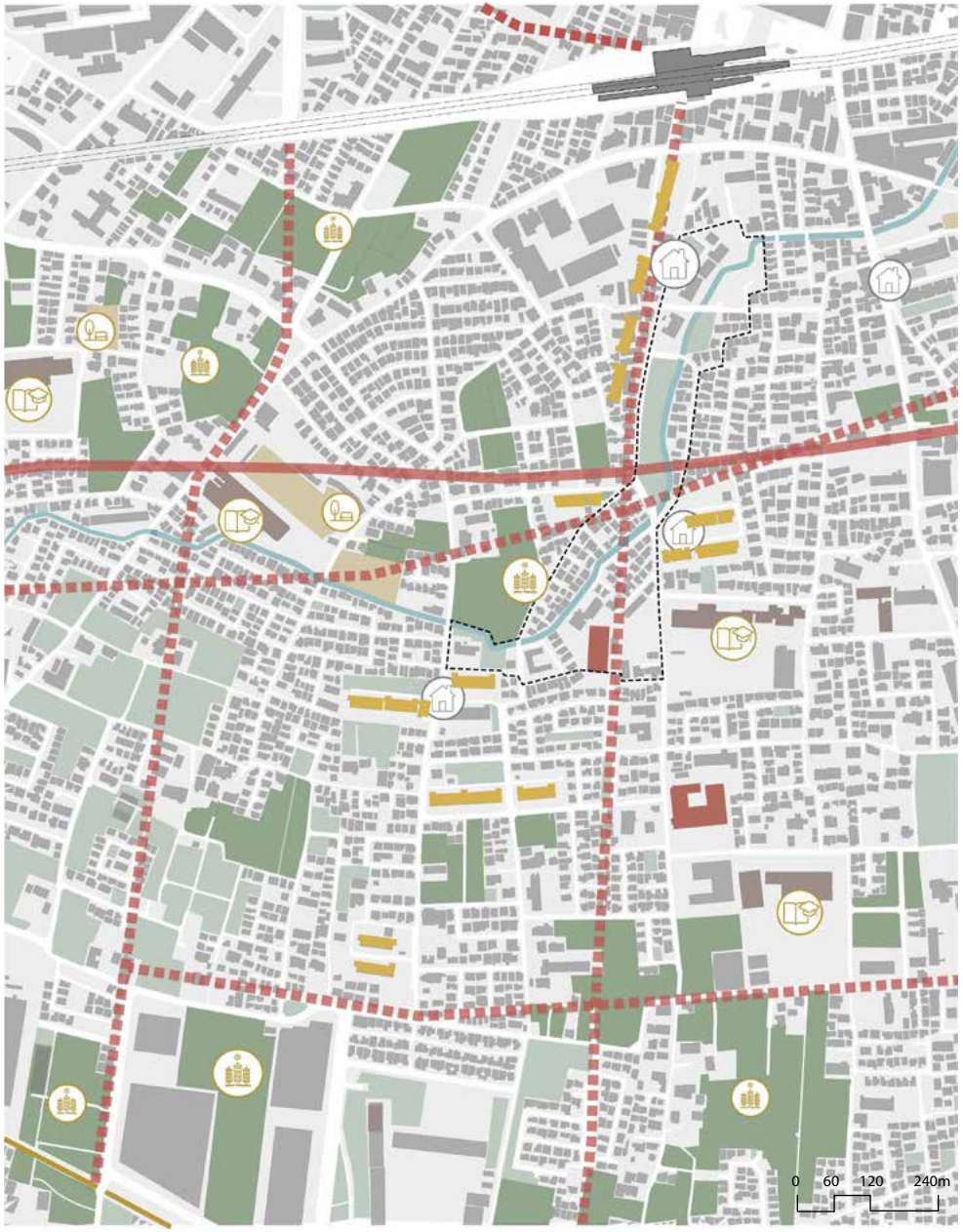
Based on the gathered information, Nishi-Tokyo is characterised by a housing deficit, caused by an increasing demand as well as by the need of renewing the existing apartment stock due to its poor conditions.

By constructing new housing projects near the new roads that cross Mukoudai-cho we aim at increasing the number of housing units, by adding 2 more floors and

New Roads planned by the Government (to be manteined)

New Roads planned by the Government (to be cancelled)

PGZ and other farmlands




Commerce

Educational

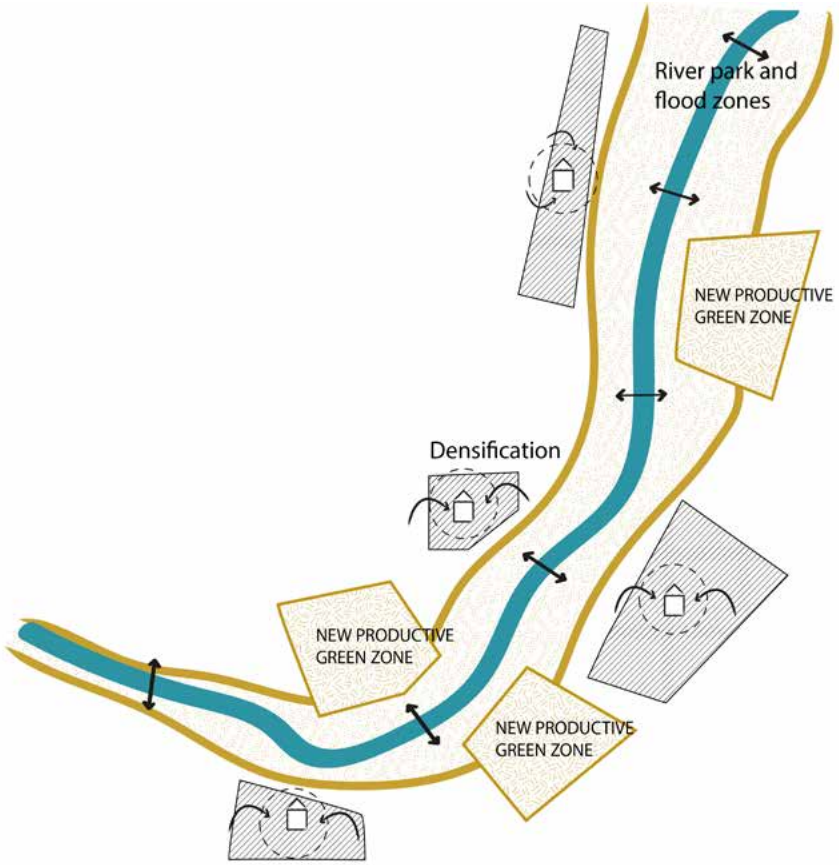
Farmland

Religious

Recreation

Housing

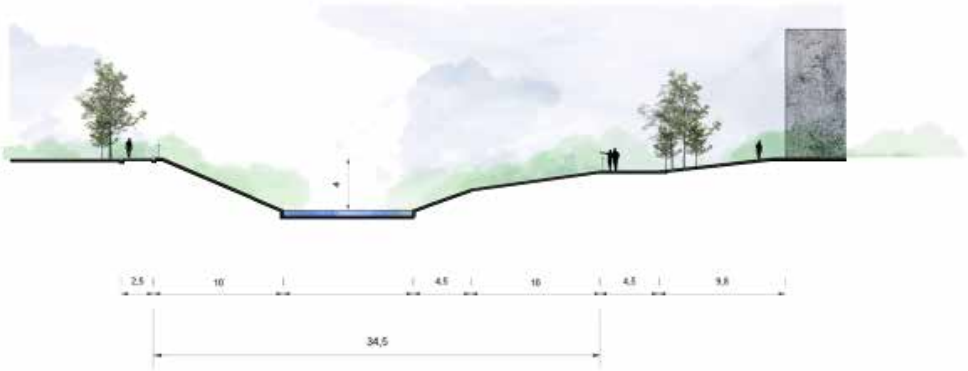
leaving 5 storage housing buildings (densification near the new roads). In 1981 in Tokyo it was implemented a new seismic regulation for the buildings, and almost all the social housing projects in this part of the city were constructed before this date. The ones constructed before this date would be structurally intervened to improve their structural capacity, at the same time we would like to purpose a re-densification by adding an adaptive independent structure to the existing retrofitted buildings. This adaptive structure will increase by 2 more floors the actual buildings, incrementing the housing units in the city.
The three purposes for the city will improve the social quality of life for the people by creating more public spaces around the river, maintaining the actual PGZ, generating new farming spaces for the community and increasing the housing units by the densification of the actual buildings and constructing near the new planned roads.



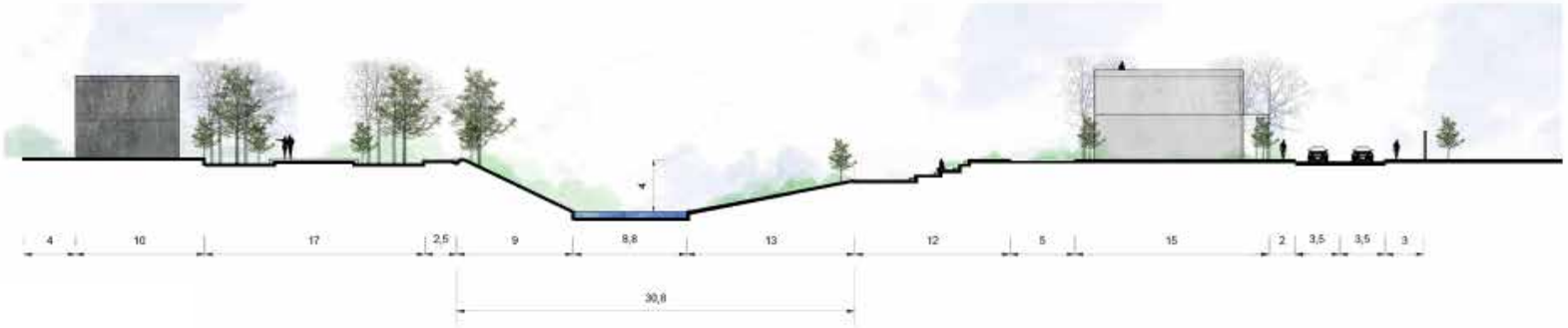

Scheme illustrating the concept idea of enlarging the waterfront and increasing the housing units (densification).

*The urban project focuses on the enlargement of the river for increasing the capacity of it, the creation of a riverfront and a big park surrounding the same that generates a connection between the upper and the lower part of Mukoudai-cho. Through this intervention we create more square meters of green spaces ad we give the possibility for new Productive Green Zones development.*

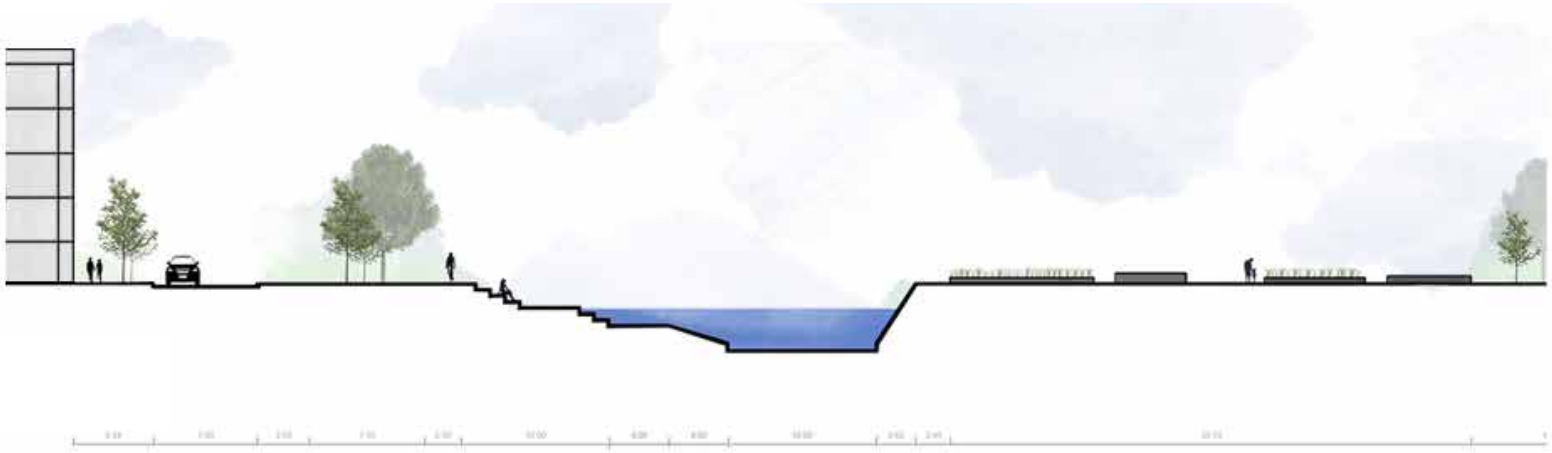
River profile during the dry season.



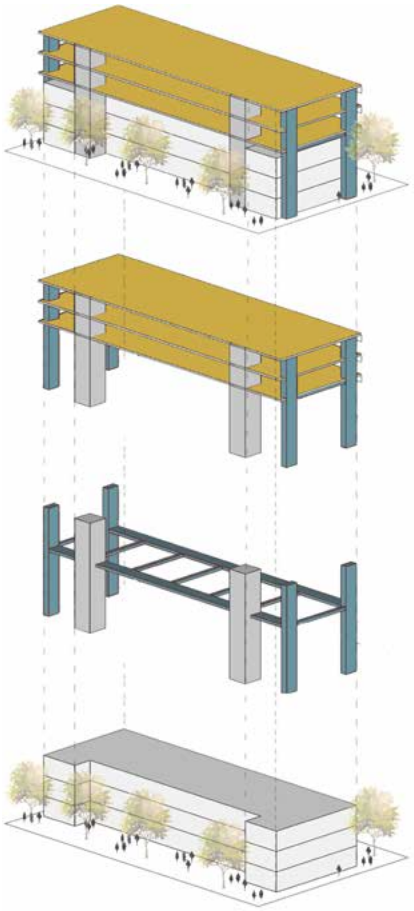

River section showing the relation with the existing and new buildings.



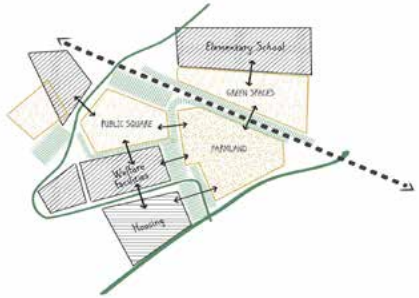

River section during the rainy season, with the communal productive green zones along the river.



*The adaptive independent structure can be added to an existing building, its principal purpose is to increase the housing units in Mukoudai-cho (more density) and avoid the demolition of the actual building. By adding this structure it is necessary to add two elevator points for the accessibility to the new apartments.*



*(photo: G. Greco, 2018)*

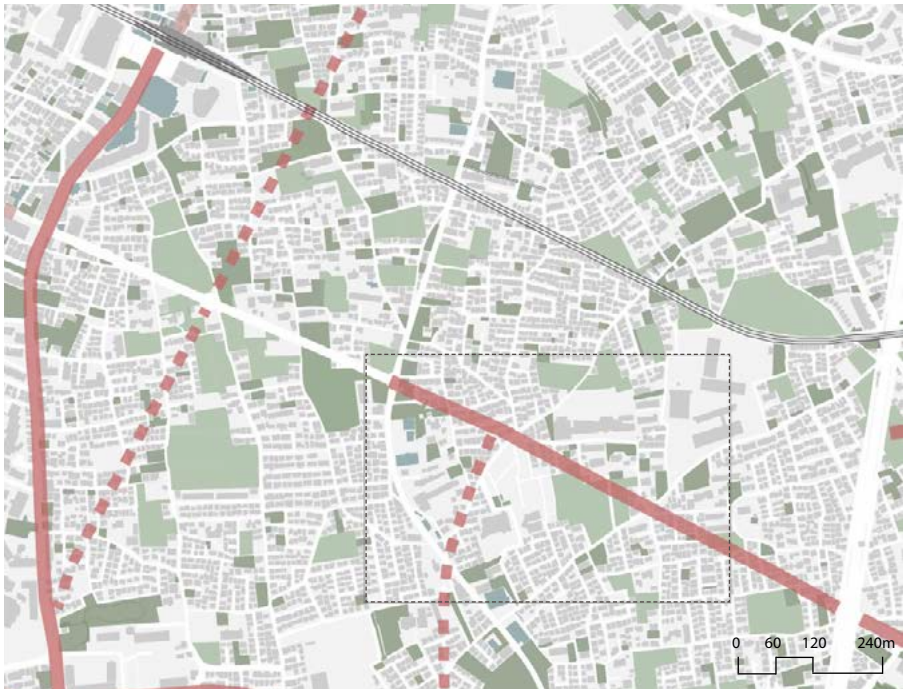



# Sumiyoshi-cho

*G. Greco, E. Spadea, M. Scarpellino, V. Nieto Ceballos, B. So*

As previously seen, located in the suburb of a megacity, Nishi-Tokyo City features a peculiar urban texture, characterised by the presence of a fragmented constellation of productive green zones (PGZ).
In the district scale of Sumiyoshi-cho, the proposal was to work on the theme of this "fragmentation" of the rural-urban pattern.
Analysing the proposal of the Tokyo Metropolitan Government about the new road system, a strong overlap among different land uses and, above all, a loss of an important amount of PGZ has been noticed: a high percentage of farmlands could be affected, increasing the fragmentation of the urban fabric and sacrificing not only the productive part, but also the image of the city.
Building on a comprehensive citywide analysis, an alternative road infrastructure system is proposed, that allows for the preservation of the existing urban fabric and for the valorization of the relationship among different land uses.
The analysis has showed that the different parts of the urban fabric had a difficult interaction. The interface between the built part and the open spaces seemed to be the result of a spontaneous and not programmed urban sprawl that, during time, has seen the progressive loss of rural areas. This "non-interface" is, above all, often a way of widening distances among different land uses, such as public and private spaces, farmlands and residential areas, etc.
To oppose the existing fragmentation, the challenging idea of working "in between" what separate the various areas has been chosen as the main guide of the proposal, thus aiming at reinforcing their connection through multifunctional public open spaces. For this reason, the project chose to work in a peculiar area that features multiple, independent land uses: a new main road (planned by the Tokyo Metropolitan Government), a farmland, a school, a religious building and housing.
The fact of identifying areas containing different (even conflicting) functions allows to specifically identify problems and opportunities of the place. In this sense, the choice to focus in the space "in between" led to find the intervention needed to solve the "interface problems" in order to deeply understand which actions and strategies could be used in the landscape and architectural design, by precisely identifying the right functions to act as a link among the different areas.
Considering the space "in between" as part of the design process could allow to extend this reasoning in different parts of Nishi-Tokyo City, also taking into account:

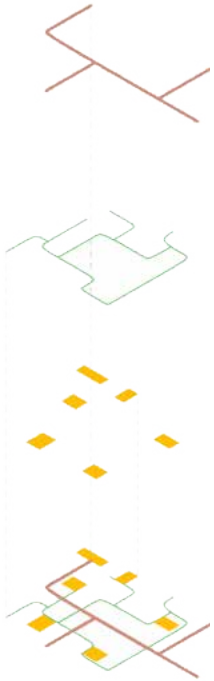
- The involvement of the community, in order to deeply understand ordinary practices and uses of the urban space;
- Further analysis and observation of the interested area;
- Identification of critical interfaces (such as fences, visual interruptions, forbidden passages, etc.);
- Hypothesis of new functions and new landscape design to solve the "non-interface";
- Consideration of sustainable tools for the urban project, such as water harvesting to prevent flooding;



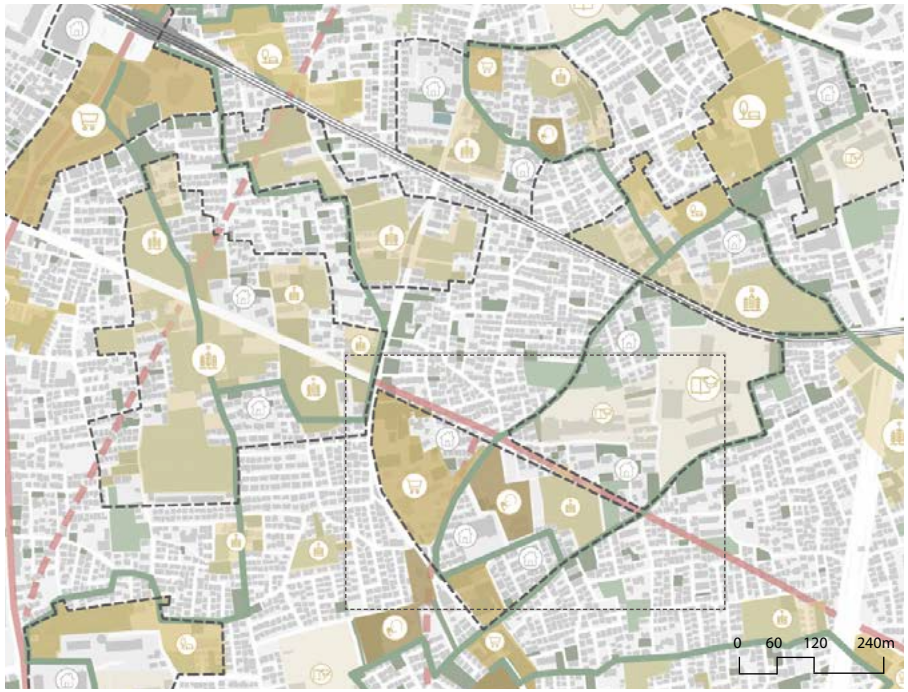

New Roads planned by the Government (to be mantained)

New Roads planned by the Government (to be cancelled)

PGZ and other farmlands

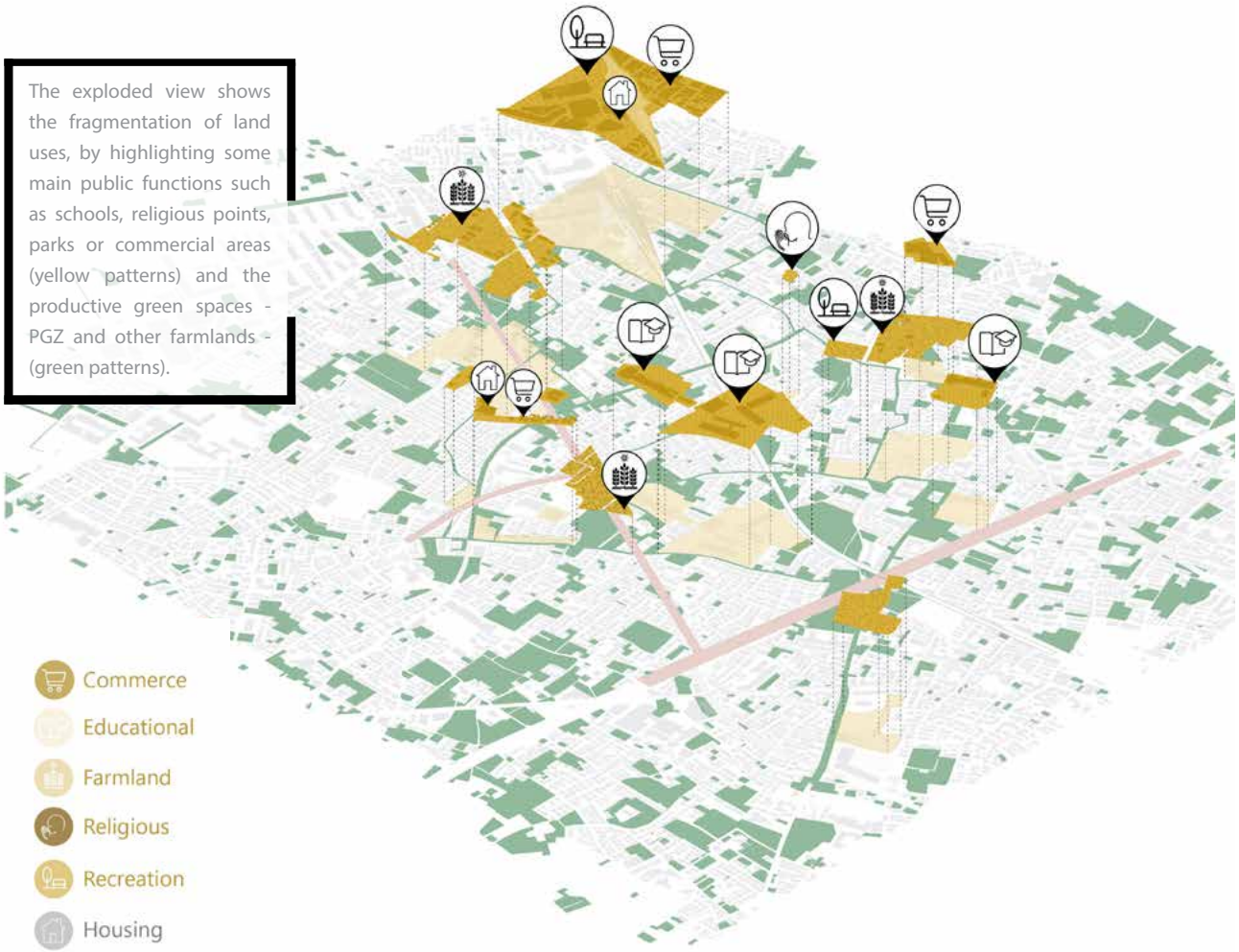


Layers: areas (yellow), ecopath (green) main roads (red).




The map explains the project proposal: 1) implemention of slow mobility (green lines); 2) analysis of land uses and definition of mixed use areas (black dashed lines) on which focusing for the project of the "between";

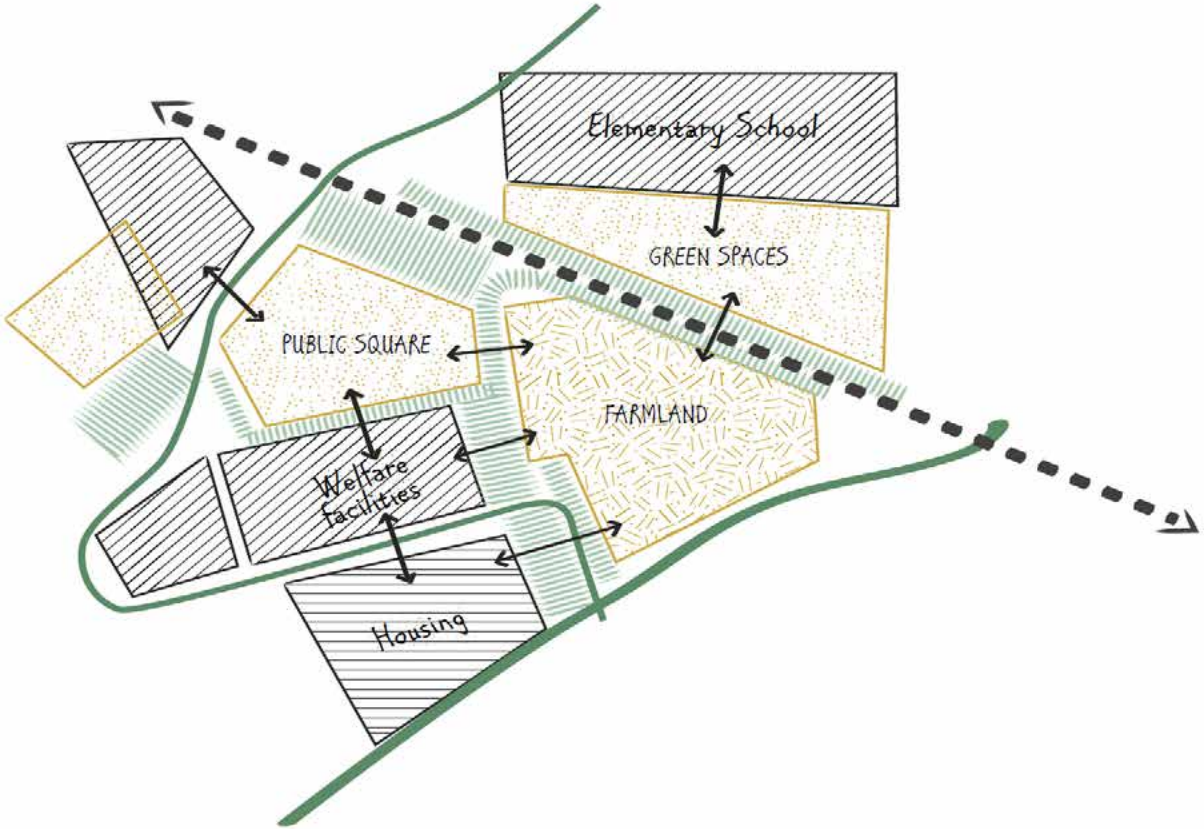
Commerce
Recreation
Farmland
Educational
Housing
Religious




The exploded view shows the fragmentation of land uses, by highlighting some main public functions such as schools, religious points, parks or commercial areas (yellow patterns) and the productive green spaces - PGZ and other farmlands - (green patterns).

The application of these steps started with the dialogue with Nishi-Tokyo City officers and with the interview to some community representatives.
Then, the observation of the area led to the identification of its critical interfaces (such as closed fences for public open spaces, absence of visual interaction among farmlands and other urban spaces, main roads planned as physical barriers, etc.).
The first design proposal has been to implement the walkability of the area with a new "ecopath". Talking about connections, how can they be translated into an urban design project? The answer was working on the design of new open and built spaces. The so-called "ecopath", in fact, wants to act as a slow connecting network through the different areas, in order to easily allow safe movement for pedestrians and bicycles within the neighbourhood.
The complex relation of interface among the different areas is solved by redesigning the ground level and its topography, a new vegetation system and new buildings.
Applying the Transfer of Development Rights previously explained, the project allows the process of buildings' relocation, giving the possibility to reshape a more liveable and inclusive urban landscape.
The intent is to let urban, rural and green spaces merge through a new space were existing and new facilities are connected, keeping the human scale of the district.
Specific features of the new spatial organisation are the new "water plaza", new buildings for collective use (library, market and association centre) and a new planted are,

the "wood".
The new road must not be a barrier, so a footbridge directly connects the two areas, while providing added landscape value. The road sections designed are safer for pedestrians and bikers, in order to implement a slow way of moving in the city.
The projected buildings create an inclusive courtyard, defining a positive environment for the community.
The new "water plaza" is designed to harvest water during the rain season, in order to be both a community open space and a sustainable urban object.
The vegetation changes with the change of seasons, producing an interesting landscape.
Greenery and trees surround the new open space, for visual and acoustic reasons, in order to guarantee liveability and safety.
In the end, to promote the image of Nishi-Tokyo City as an "eco-city", the design of a flexible and multifunctional urban furniture is an important point. Thought to be a small and inexpensive public service, it could also be rented by the community members for private uses (such as selling point for vegetables)..
This little device, as part of the wider rethinking of the area, can contribute to define a new way of living, creating not only a new image of the city, but also the occasion to merge together something that - until now - was not thought to collaborate or coexist.




Scheme representing the space "in between" (green lines) the different areas and the intent to create a new connection.

*New buildings host multiple functions: a library, a market for local productions, a cafe and a space for community associations.*

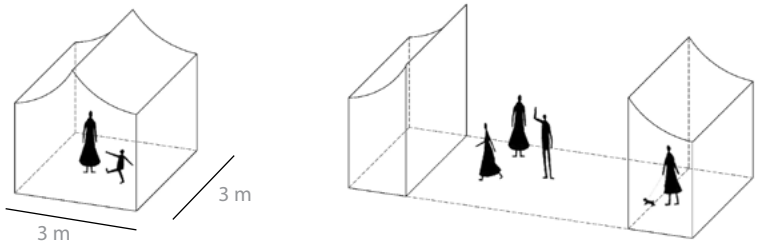
*The "water plaza" has a double function: creating a more liveable space for the community and conceiving a public open space as a sustainable collector of water preventing from flooding and usable by local producers.*

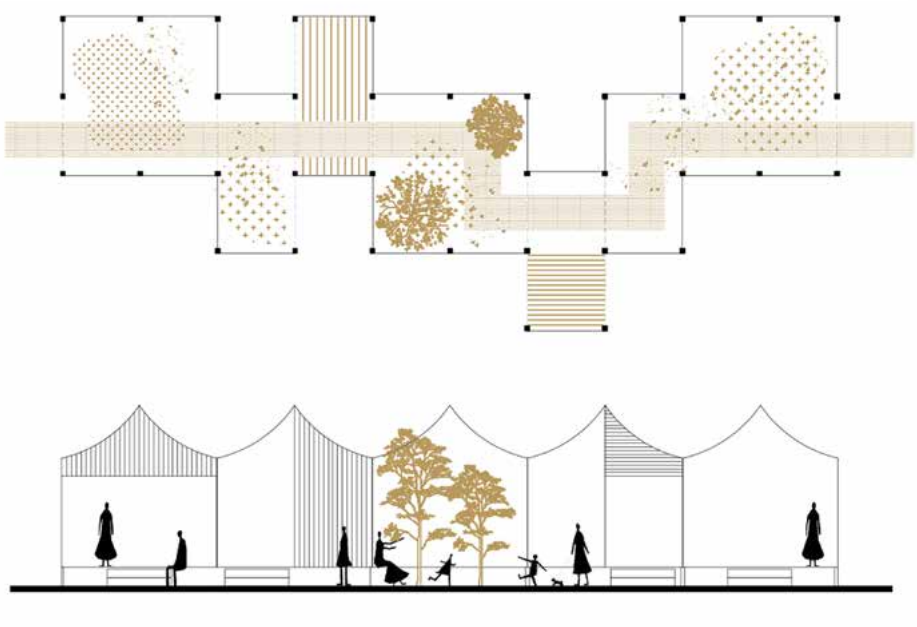
Neighbourhood road. Existing condition

Main road. One way each direction and improvement of slow mobility.

Main road. Existing condition

Footbridge overpassing the main road.



Modular muntifunctional boxes. Typologies and p'ossible combinations.

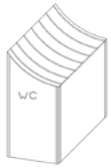
vegetable shop

bus stop

pet relax spot

green house

tools storage



public toilet

flower shop

book share

vending machine

green pergola

relax spot

bike storage

*Sight of farmlands and parks coexisting in the urban texture. Throught the project, the value of the constellation of green areas is enhanced, understanding how this complex fragmentation can be a potentiality of unity for the community.*

# Comments from the Urban Planning and Agriculture Community of Nishi-Tokyo City

The final presentation of the work involved representatives from the Urban Planning Committee and from the Agriculture Community. The following lines shows the feedback they were asked to give after the presentation.

***Kikuko Kimura,*** *Nishi-Tokyo City Resident / Nishi-Tokyo City Planning Committee Member*
It was very meaningful to me. At first, the subtitle being "sprawled" was a little shocking, but was understandable in one sense. It was fruitful for us that we were able to hear viewpoints and proposals from students from abroad in front of the mayor. I thought that having the attitude of wanting the city to be more beautiful, more stylish and more environmentally friendly is important, and I am hoping people with that kind of attitude participating in the public sector to improve Nishi-Tokyo City.

***Kei Uchida,*** *Nishi-Tokyo City Resident / Nishi-Tokyo City Planning Committee Member*
The proposals were sensational in how it thought back on the basic problems on urban planning (problems of the current Productive Green Space Act, road construction plans, and river restoration project, etc.), and how the scale of the proposals was large. Next step will be to discuss how we can build consensus with the landowners, how to overcome the current regulations, and how to make choices and decisions.

***Miki Iwasaki,*** *Farmer in Sumiyoshi-cho*
When considering about urban farmland conservation, I had never thought of the connections to the surrounding environment, so it was very interesting to listen to wonderful ideas. Also, concerning road planning, though I had a negative image on it, since the proposals provided ideas of how it can coexist with farmlands and green open spaces, I can now see some positive aspects.

***Masahiko Nukui,*** *Agriculture*
It was interesting how the Italian students and professors are recognizing the current situation of Nishi-Tokyo very well. Also, I was very happy to know that we share the same opinion that urban farmlands have more functions and potentials other than pure productive function. I think that it is very important to consider how these proposals can realized and developed.

***Keiko Miyazaki,*** *Nishi-Tokyo City Planning Committee Member / North-Tama Natural Environment Coordination Committee/ Non-Profit Organization "Society for the Conserving the University of Tokyo Farm"*
It was very new and interesting for the City Planning Committee to work together with the university, especially attending to an international presentation. People who have been working with the University of Tokyo Tanashi Farm from 1992 had a chance to conduct a workshop with Prof. Nakashima of the Department of Agriculture for one year on "How would Tanashi Farm change?: Its vision and coordination with the community". I would like to think how city planning and

resident education can be linked to the future of Tanashi Farm, which is currently for sale, with the open-minded university. It was a bit disappointing that the "urban green space management system" which was proposed in the previous studio was not included.

***Toru Nagasawa,*** *Nishi-Tokyo City Fire Department Chief*
1. Urban farmlands have several functions that are related with disasters (prevention of the spread of fire, providing evacuation space, providing fresh food in case of earthquake, tractors being useful in rescue operation, etc.)
2. Seeking ways to coexist with the river is very important. When the river flow is low, widening of the river provides evacuation space in case of disaster occurrence. Also, it is important and necessary for the fire engines to get close to the river, so that they can get water to extinguish fire more easily.

***Hiroshi Shibahara,*** *City Planning Division, Department of Urban Development, Nishi-Tokyo City Government*
Proposals with new viewpoints (revising the current road plan to prevent the fragmentation of urban farmlands, deregulating the zoning (providing bonus FAR) to connect and increase urban farmlands) were very meaningful to us. On the other hand, to put the proposals into practice, we may need to think back to how urban agriculture should be, since the fact that currently farmlands are privately owned properties and that agriculture is a private business which are big constraints. As a member of the city government, I felt the need of multidisciplinary innovative mind.

***Tomoko Miyamoto,*** *City Planning Division, Department of Urban Development, Nishi-Tokyo City Government*
Thank you for selecting Nishi-Tokyo city as your study area. Not only in Nishi-Tokyo City but in Japan as a nation, values of scenery along rivers in urban areas have not gained recognition, but the presentation today showing the green corridor along the river in Mukodai-cho was very attractive.

***Sadao Matsumoto,*** *City Planning Division, Department of Urban Development, Nishi-Tokyo City Government*
The proposal was very interesting. Please look forward to know how today's proposals are going to be realized.

***Kouichi Maruyama,*** *Nishi-Tokyo City Mayor*
It was a wonderful presentation, showing how the SDG's connect with the sustainable development of Nishi-Tokyo City.

The intervent of the mayor of Nishi-Tokyo City (Mr. Kouichi Maruyama).
*(photos: A. Murayama, 2018)*

*A picture of the group after the final discussion at Nishi-Tokyo Municipality. Among the participants, as well as the mayor and the City Planning committee, the farmers interviewed.*

*(photo: G. Cotella, 2018)*

## Joint Workshop participants' comments

After the presentation, participant students opened up a moment of discussion together with professors, representatives of Nishi-Tokyo City and every person that took part in the final presentation of the Workshop's results.
While sharing experiences between Tokyo and Torino, the focus of the discussion was a comparison between two completely different realities. Anyway, these moments allowed participants to find out some similarities on "green" experiences within the limits of urban area. In fact, despite different cultural heritage, both cities need to improve air quality, local food production and sense of belonging; accordingly, it can be worth to share good practices on the matter.
For this reason, Italian students briefly explained the situation of Torino and they showed why the de-industrialization process, that had characterised the city since the 1980s, has been exploited as an opportunity to enhance farming experience in cities. Furthermore, more practical projects were mentioned – MiraOrti and OrtiAlti – completely different in size, purposes and location, but increasing Nishi-Tokyo citizens' curiousity.
The Italian team explained that Torino is facing important changes, from redefining development trajectories to more institutional related matters; in this framework, the city is trying to build a stable structure to promote and sponsorize green experience within the border of the city.
Probably, first steps have been made by Torino citizens on the awareness of the necessity to change their idea on green areas. The situation is slowly changing, but it is necessary to look up at other realities, for example Tokyo, to better understand how, for instance, Japan is facing the problem and learn through knowledge exchange dynamics.
A second and final part of the discussion focussed on issues related to local food production.
What does it means km0 in a city of 35 millions people like Tokyo? Do we apply the same standard in Torino and in Tokyo?
Nishi-Tokyo City representatives argued that, in their understanding, it can be considered Km0, everything that is produced, transported, sold and consumed within the Nishi-Tokyo area. At the moment, it has been calculated that 39% of consumed vegetable in Nishi-Tokyo City were also produced there. Considering Tokyo, instead, the situation is different and probably worse. The reason for this difference could be in the will of Nishi-Tokyo local people to preserve productive fields, although farmlands are constantly threatened.
Generally the situation in Italy is similar: smaller municipally consuming more local food because food logistic and high food demand doesn't allow big city to satisfy completely the requests.

## CODESIGN PROCESS

### STEP I

Nishi-Tokyo Municipality involvement
collective webinars
Politecnico di Torino desk studies
The University of Tokyo studio

### STEP II

joint workshop analysis
field visit and interviews
discussion with the city staff

### STEP III

assesments & first proposals
midterm review
proposal definition
final review

### STEP IV

final presentation to the Mayor and to the city planning committee
discussion with the participants

Joint Workshop students working on the proposals.
*(photo: A. Murayama, 2018)*

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A. Iida

Post-Doc. Researcher
K. Matsuo

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U-Tokyo:
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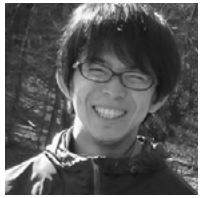
U-Tokyo:
K. Miura


U-Tokyo:
K. Kurimoto

U-Tokyo:
H. Park

U-Tokyo:
B. So

U-Tokyo:
I. H. Wang

PoliTo:
L. Costa

PoliTo:
G. Greco

PoliTo:
A. Herrera Suarez

PoliTo:
F. Letteriello

PoliTo:
D. Najar Ramirez

PoliTo:
V. Nieto Ceballos

PoliTo:
G. S. Principe

PoliTo:
M. Scarpellino

PoliTo:
E. Spadea

PoliTo:
A. Valle

Joint Workshop group during a discussion with the city staff. (above) and during a midterm review (below).

*(above, photo: A. Murayama, 2018; below, photo: G. Cotella, 2018)*

Joint Workshop group with Nishi-Tokyo planning committee at the final presentation.

During the presentation.
*(photo: G. Cotella, 2018)*

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**(October 2017 - January 2018)**

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***(M) Master Student***
***(D) Doctoral Student***
***(R) Researchers***
***(RS) Research Student***

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June 2018