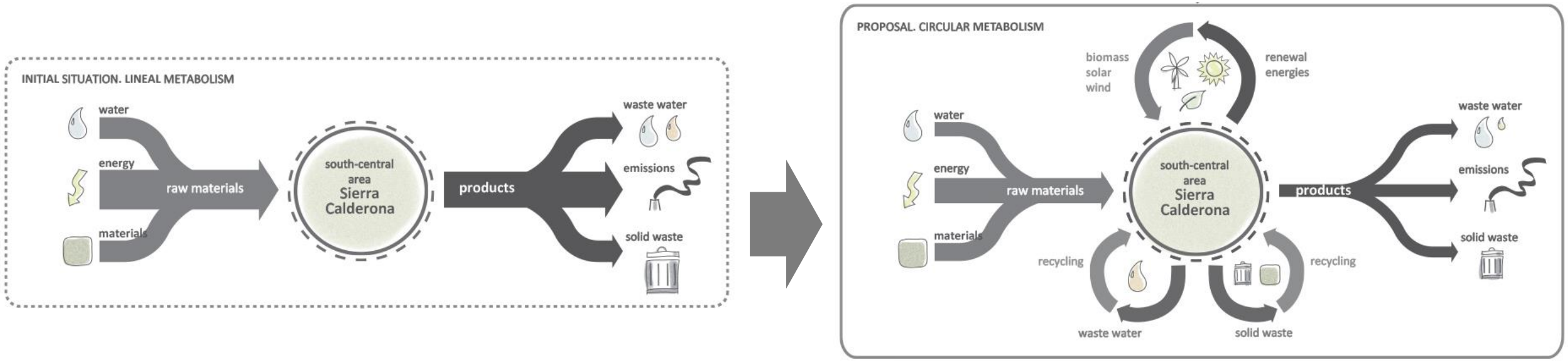
4 Example: THE SIERRA CALDERONA STRATEGIC PLAN (Galan, 2013)

REGIONAL STRATEGIES (5 SPECIFIC FOR METABOLISMS)

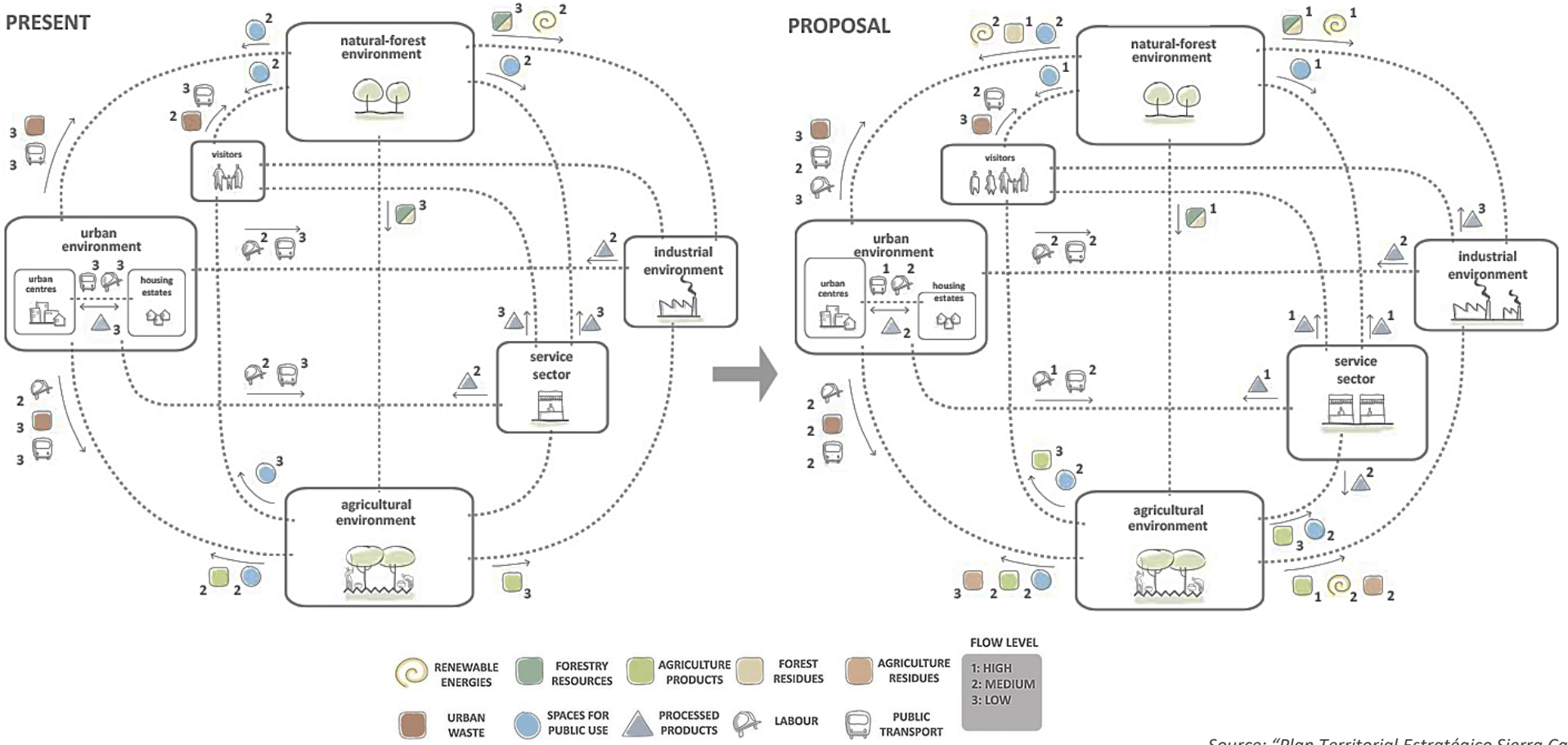


SUSTAINABLE TRANSITION
TOOLS FOR THAT?

Source: "Plan Territorial Estratégico Sierra Calderona », Galan (2013)
Adapted from Cities for a small planet", Richard Rogers, Faber & Faber, 1997

4 Example: THE SIERRA CALDERONA STRATEGIC PLAN (Galan, 2013)

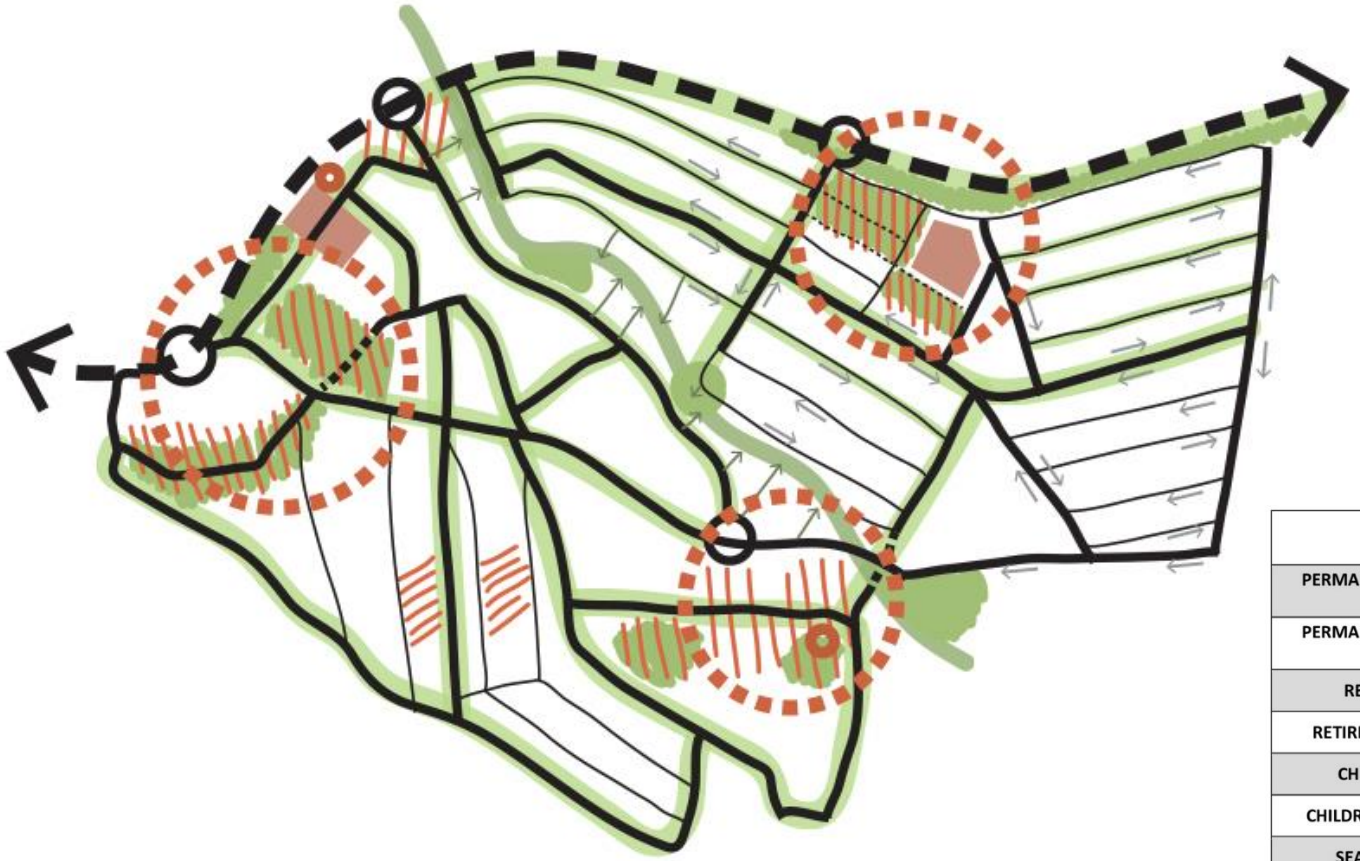
A VISION: A REGIONAL METABOLIC MODEL: CURRENT & FUTURE



Source: "Plan Territorial Estratégico Sierra Calderona », Galan (2013)

4 Example: THE SIERRA CALDERONA STRATEGIC PLAN (Galan, 2013)

TOOLS: LAND-USE PLAN + SECTORAL PLANS + PILOT PROJECTS



	CARBON FOOTPRINT	FOOD FOOTPRINT	LODGING FOOTPRINT	SERVICES FOOTPRINT	TOTAL FOOTPRINT	Number of Earths
PERMANENT RESIDENT WORKING IN THE AREA (CURRENT)	17.1	19.5	4.5	10.6	51.7	3.29
PERMANENT RESIDENT WORKING IN THE AREA (AFTER PROPOSAL)	4.9	16.5	4	7.5	32.9	2.09
RETIRED RESIDENT (CURRENT)	15.2	17	3.2	6.6	42	2.67
RETIRED RESIDENT (AFTER PROPOSAL)	4.9	12.4	4.5	9.1	30.9	1.97
CHILDREN RESIDENT (CURRENT)	17.4	19.5	7.4	12	56.3	3.58
CHILDREN RESIDENT (AFTER PROPOSAL)	5.7	16.5	3.4	11.6	27.2	2.37
SEASONAL RESIDENT (CURRENT)	22.8	19.5	6.5	12	60.8	3.87
SEASONAL RESIDENT (AFTER PROPOSAL)	7.5	16.5	3.2	11.6	38.8	2.47

Source: "Plan Territorial Estratégico Sierra Calderona », Galan (2013)

4c. Some examples

LANDSCAPES OF PRODUCTION

(studio course, Aalto University)

VISUALIZING LANDSCAPE SYSTEM RELATIONSHIPS
(11.07.2022, Juanjo Galan Vivas, Polytechnic University of Valencia)

STUDIO COURSE: 'LANDSCAPES OF PRODUCTION' (Aalto University, 2018)

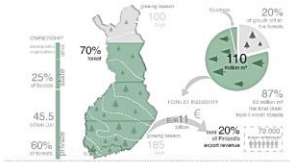
Student: Rosaliina Luminiitty
Teacher: Juanjo Galán)

STAFF TRAINING SEMINAR
TELOS project
(Rome, Italy, 11-13 July 2022)

FORESTRY 1/4

DIFFERENT SCALES OF FORESTRY TODAY

1 FINLAND



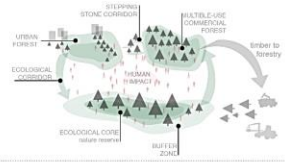
Forestry, as we see it nowdays, has started in the beginning of 1900 century. It has had an enermous effect to Finlands economy and development, and demand for forestry products still continues to grow. In Finnish forests the annual growth is much greater than annual fellings. About 60 % of forests are own by private persons (on average 30 ha/private owner) and this affects specially the forests in the Southern-Finland.

Forestry = the science or practice of planting, managing and caring for forests

2 UUSIMAA

PERI-URBAN based on: 1) population density (400–1500 people / km²) 2) landuse (typically non-urban: airport, large industrial areas, traffic areas etc.) Peri-urban areas are under urban influence and they show rural character due to the presence of an agro-forestry sector.
Forestry can be seen as a science or practice of planting, managing and caring for forests. In the peri-urban area municipalities don't in general have forestry as such due to the fact that green areas areas are mainly for recreational purposes.

3 PERI-URBAN

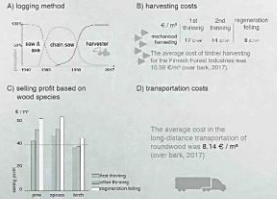


Different types of forests in the peri-urban area.

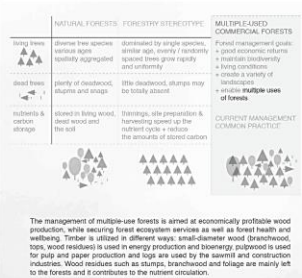
The outline factors that the forestry is based on are 1) felling of timber 2) economy 3) biodiversity and landscape 4) climate change

PRODUCTION €

Following criteria determine wood price besides market situation: A) logging method, terrain and time period when the logging is realized, B) amount of wood in the logging area, succession phase (thinning / regeneration felling) C) quality of wood, diameter and size of the trunks, D) distance from logging area to the road, distance to the factory/pulp.



BIODIVERSITY

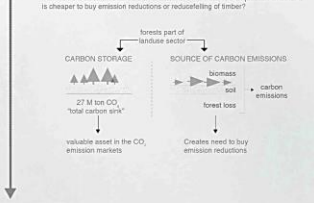


The management of multiple-use forests is aimed at economically profitable wood production, while securing forest ecosystem services as well as forest health and wellbeing. Timber is utilized in different ways: small-diameter wood (branchwood, tops, wood residues) is used in energy production and bioenergy, pulpwood is used for pulp and paper production and logs are used by the sawmill and construction industries. Wood residues such as stumps, branchwood and foliage are mainly left to the forests and it contributes to the nutrient circulation.

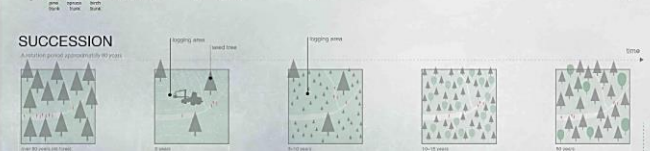
Forestry goals in the peri-urban area.

CLIMATE CHANGE

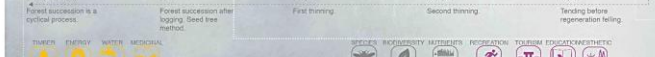
In order to limit global warming to 1,5 °C, changing forestry practices can be an effective climate adaptation strategy. Besides agriculture forestry has potential to balance carbon cycles and act as carbon storage. Finland needs significant carbon sink and there is need to discuss how the EU emission regulations and reference levels are taken into account. After harvesting, coal in the biomass and emissions from soil are calculated as carbon emissions. This leads to the question whether it is cheaper to buy emission reductions or reduce felling of timber?



SUCCESSION



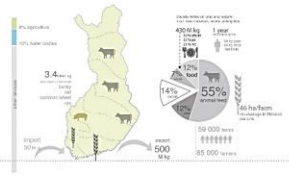
ECOSYSTEM SERVICES



AGRICULTURE 2/4

DIFFERENT SCALES OF AGRICULTURE TODAY

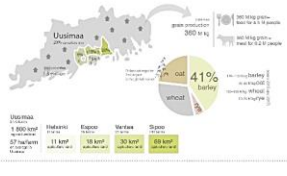
1 FINLAND



Finland is one of the latest urbanised countries in Europe. Land taken for building was mainly in agricultural use and nowadays Finland has on average 8 % agriculture land. In terms of landuses, grain production is the largest sector in the the world's northern most agricultural country. This meands that about 1 M hectar of total field area (2.9 M hectar) is used for the production of the cereals.

Agriculture = practice of farming, including cultivation of the soil, the growing of crops (and the rearing of animals) to provide food, wool and other products.

2 UUSIMAA



In the Uusimaa region, the amount of agriculture fields should be maintained at the current level

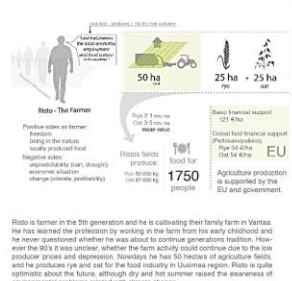
- productive compared to the rest of Finland
- population concentrated to the southern parts
- landscape and cultural values

3 PERI-URBAN

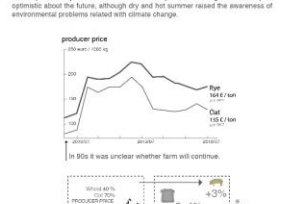
Largest agriculture entity in the metropolitan area (2800 ha) is located in the Vantaanjokilaakso. However, agriculture fields in Sipoo are continuum of the largest fertile agriculture unity (69 208 ha) in Uusimaa region. If there is 100 ha in 2.5 km x 2.5 km area for the cultivation purposes, agriculture is most likely economically profitable. Also for instance cohesion of field areas, form, slope and transportation costs affect to the profitability.

The outline factors that the forestry is based on in this course are following:
1) felling of timber 2) economy 3) landscape 4) climate change

€RISTO THE FARMER

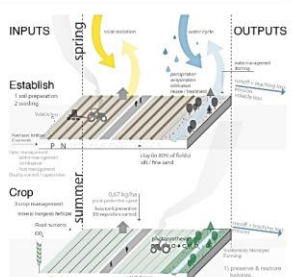


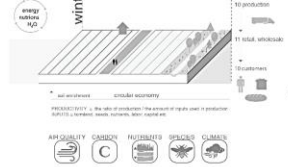
Risto is farmer in the 5th generation and he is cultivating their family farm in Vantaa. He has learned the profession by working in the farm from his early childhood and he never questioned whether he was about to continue generations tradition. However the 90's it was unclear, whether the farm activity could continue due to the low producer prices and depression. Nowadays he has 50 hectars of agriculture fields, and he produces rye and oat for the food industry in Upsalan region. Risto is quite optimistic about the future, although dry and hot summer raised the awareness of environmental problems related with climate change.



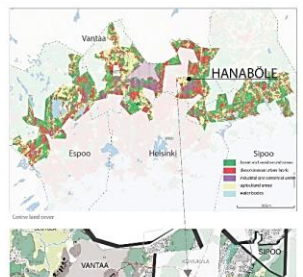
After hot and dry summer 2018, oat and wheat producer prices increased 40–70 %. Due to the low share in the consumer price (+ 3–4 %), development was not so dramatically visible for the consumers. Grain price incereasement affected also pork customer prices approximately + 3 %.

PROCESS

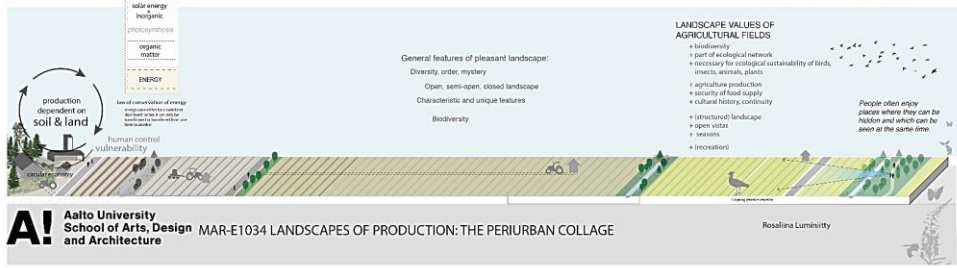




PERI-URBAN NOW



ECOSYSTEM SERVICES



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AGRICULTURE 3/4
SPECULATIONS OF FUTURE

1 SPECULATION OF THE FUTURE, YEAR 2100

DRIVERS OF CHANGE
1 technological drivers
2 cultural drivers
3 climate drivers
4 urban drivers

interaction between drivers

CRITERIA
Criteria for the speculation

IMPLEMENTATION - FUTURE
Risto – The Farmer SCENARIO A
Risto – The LED farmer&Experience producer SCENARIO B
Risto – The Robot & climate saver SCENARIO C

PAST

LANDSCAPE PATTERNS 1954 / 2100 / 2100 A / 2100 B

SWOT
STRENGTHS / WEAKNESSES / OPPORTUNITIES / THREATS

Aalto University School of Arts, Design and Architecture MAR-E1034 LANDSCAPES OF PRODUCTION: THE PERIURBAN COLLAGE

AGRICULTURE 4/4
SPECULATIONS OF FUTURE

1 INITIAL MAP
WITH GREEN FINGER CONCEPT

CRITERIA FOR THE PROPOSAL
1) Green infrastructure network - Green fingers
2) Agriculture intensification - Cultural history values
3) New urban structure along the road infrastructure and industrial areas.

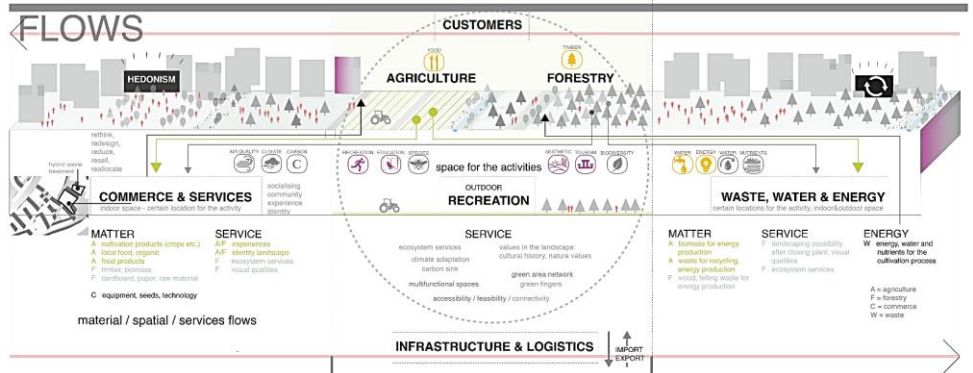
2 COLLABORATION
WITH OTHER ACTORS IN THE AREA OF PERI-URBAN

KEY DRIVERS OF CHANGE
1) URBANISATION
2) TECHNOLY DEVELOPMENT
3) CLIMATE CHANGE

CRITERIA
COMMERCE & SERVICES
OUTDOOR RECREATION
WASTE, WATER & ENERGY
AGRICULTURE & FORESTRY
Risto – The Robot & climate saver SCENARIO C
selected scenario for the future

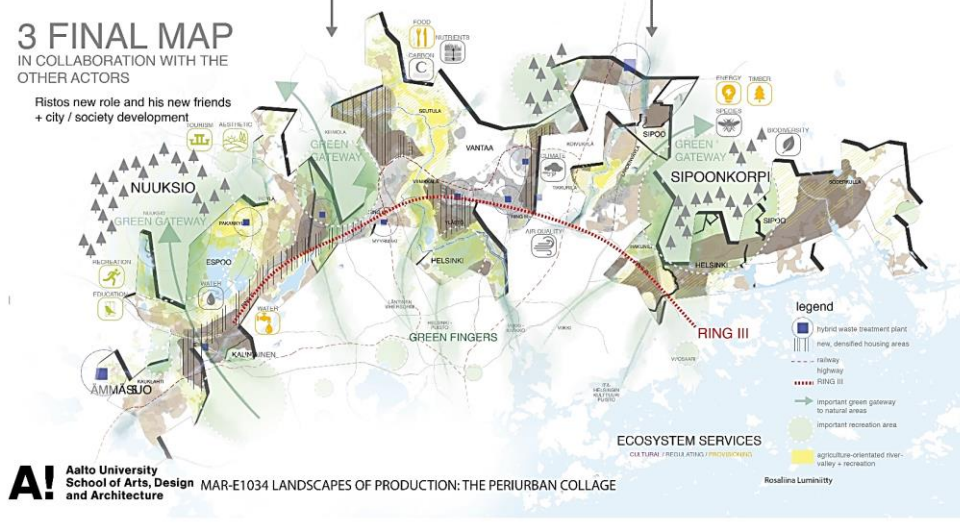
CONCEPT 1 zero km products & healthy eating
CONCEPT 2 recreation heaven & tourist attraction
CONCEPT 3 circular economy
CONCEPT 4 climate resque

FLOWS



3 FINAL MAP
IN COLLABORATION WITH THE OTHER ACTORS

Ristos new role and his new friends + city / society development



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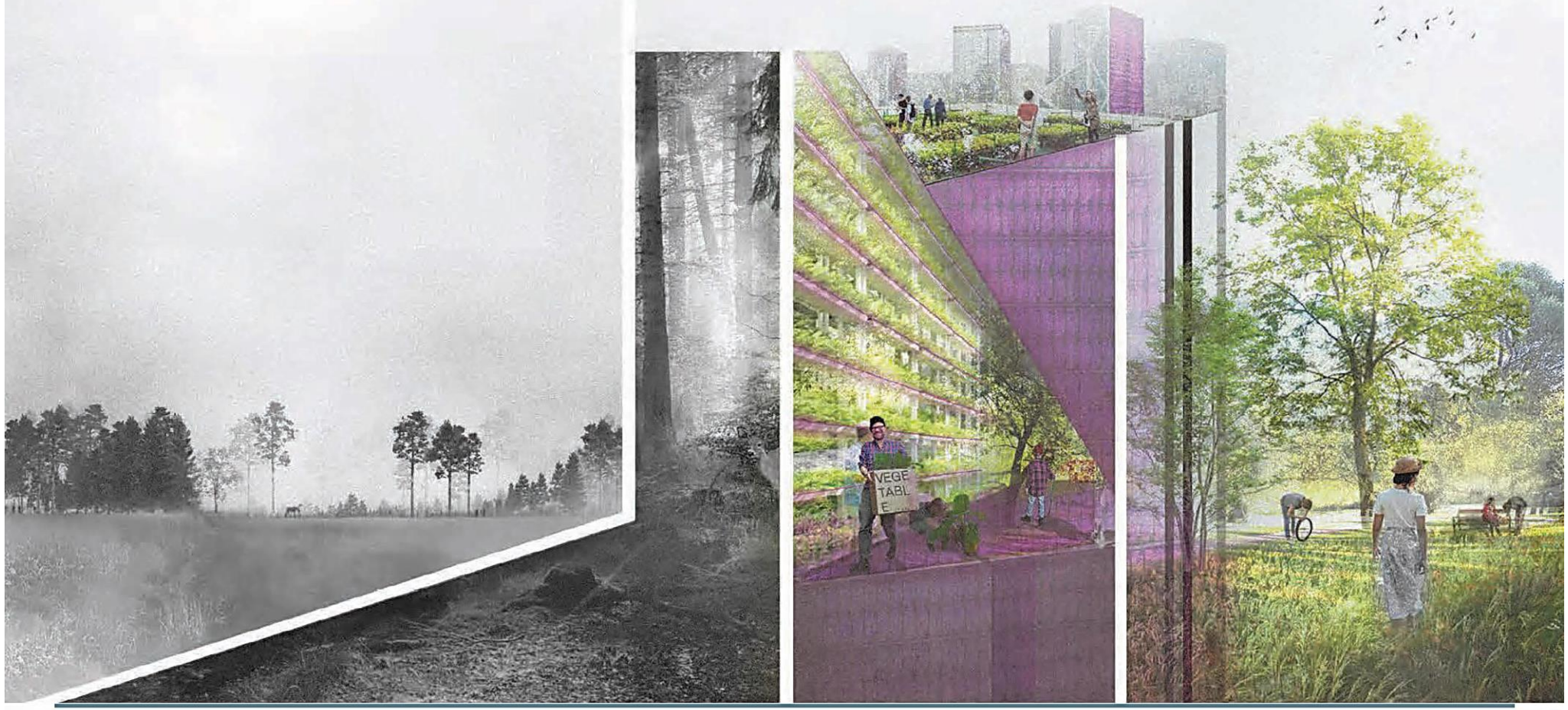
Peri-Urban Collage

Agroforestry in the Metropolitan Area of Helsinki



Country / City	Finland, Helsinki
University / School	Aalto University, School of Arts, Design and Architecture
Academic year	2018–2019
Title of the project	Peri-Urban Collage: Agroforestry in the Metropolitan Area of Helsinki
Authors	Rosaliina Luminiitty

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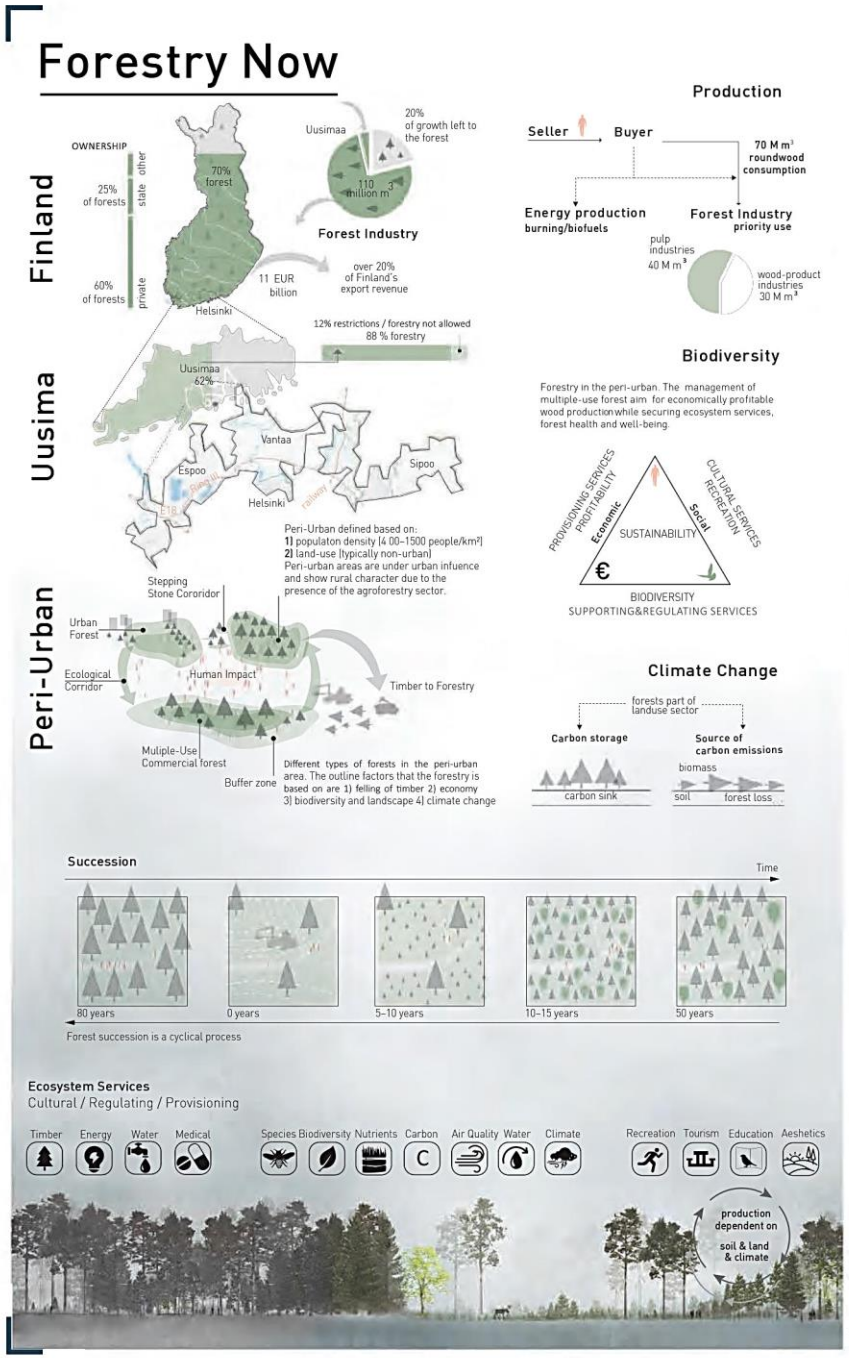

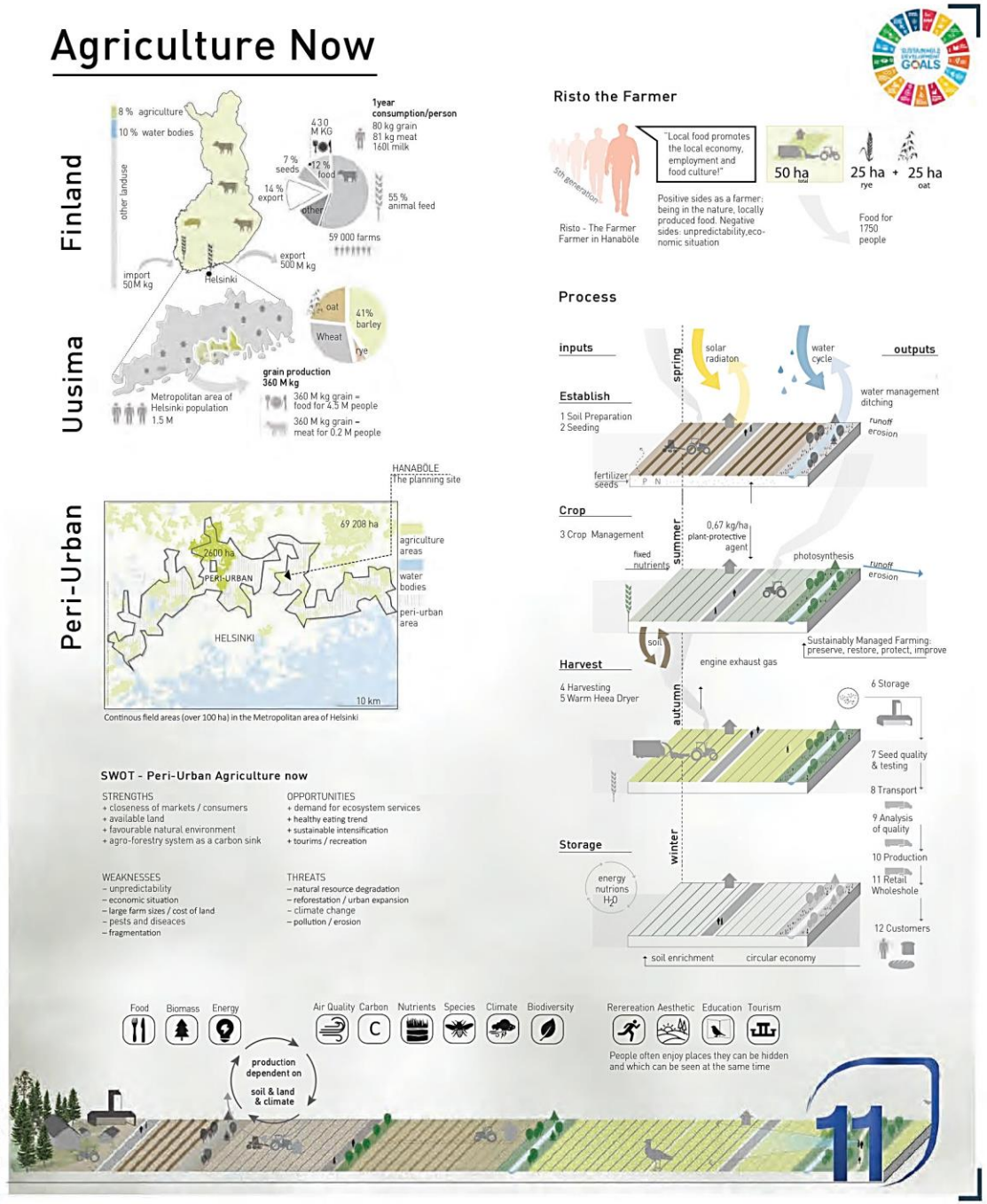

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Speculation - 2100

Drivers for Change

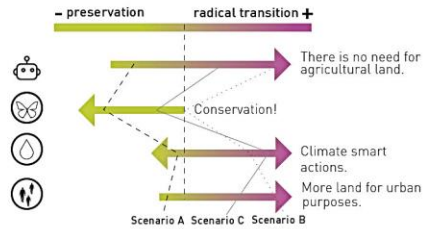
technological drivers
automatization & robotics
artificial LED cultivation

cultural drivers
cultural identity & values
biotopes & open landscapes

climate drivers
better cultivation conditions
climate change

urban drivers
demand for recreation spaces
urbanisation

Transitions in Change



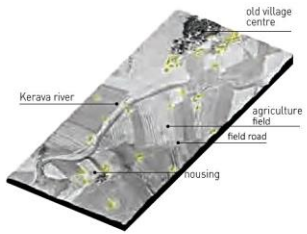
Criteria

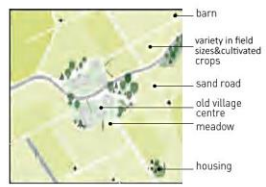
- climate change requires changes in the food production sector.
- urbanisation continues due to the need for sustainable solutions.
- rurbanisation = a process where the physical environment loses qualities that were traditionally associated with urban or rural settings.
- technology will develop rapidly: enables LED indoor cultivation, carbon free energy production, robotisation, new materials to replace plastic.

Implementation - Future

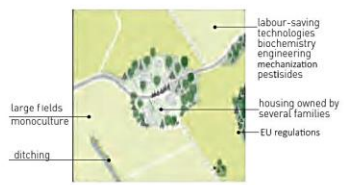
Past (1954)

Kerava river valley - historically significant and valuable landscape.

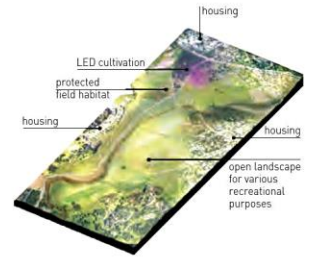


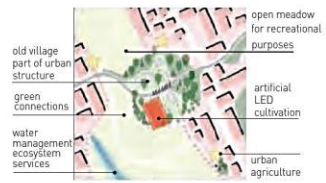


Scenario A
Risto - The Farmer

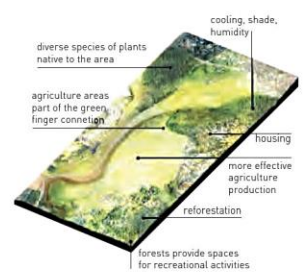


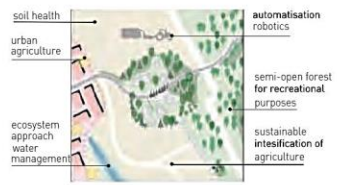
Scenario B
Risto - The LED farmer & Experience producer





Scenario C - selected scenario
Risto - The Robot & Climate Saver

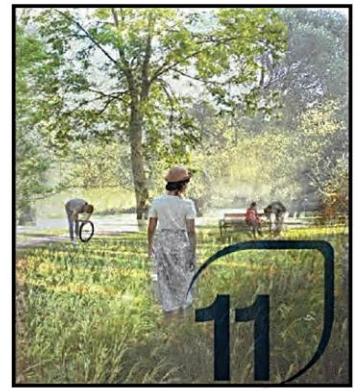




Scenario A

Scenario B

Scenario C



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