

## GREEN WEDGES - JIAXING, ZHEJIANG PROVINCE, CHINA

Section	 <p><b>CLEARINGHOUSE</b> 中欧城市森林应对方案</p> <p><i>This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 821242</i></p>
<b>1</b>	<b>TITLE OF CASE STUDY AREA:</b> "Green Wedges" Jiaxing, China
<b>2</b>	<p><b>INTRODUCTION</b></p> <p>The Urban Green Space System Planning of Jiaxing (2006-2020) planned three green wedges around the City based on existing ecological resources. These are South Green Wedge, East Green Wedge and Northwest Green Wedge. They are important components of Jiaxing's urban green space system and aimed at regulating urban climate and providing more recreation space. These three green wedges are mainly constituted of wetland and forests and have a tight connection with the inner city through rivers. The South Green Wedge has an area of 4.72 square kilometres and is composed by three parks. These include a sports park, a children's park and a botanical garden. The Northwest Green Wedge is 3.54 square kilometres big and functions as a wetland park. The East Green Wedge has an area of 6.92 square kilometres and has been gradually changed into city parks.</p>
<b>3</b>	<p><b>KEY FACTS AND FIGURES OF THE CASE STUDY AREA</b></p> <p><b>Biogeographic region<sup>1</sup>:</b> Continental  <b>Surface area:</b> 4275 km<sup>2</sup> (city area), the urban green coverage ratio is 40.11%, the tree coverage ratio of the whole city is 25.17%, 2019  <b>Country:</b> China  <b>Region/Province:</b> Zhejiang</p>

<sup>1</sup> <https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3>

<p>4</p>	<p><b>LOCATION MAP(S)</b></p> <p><b>Location in China</b></p> <p><b>Location in Zhejiang Province</b></p> <p><b>City of Jiaxing</b></p> <p><b>Three Green Wedges in Jiaxing City</b></p> <p>The location of Jiaxing in China, and the layout map of three wedges in Jiaxing (map created by Jiali Jin)</p>
<p>5</p>	<p><b>NAME OF MUNICIPALITY AND WEBSITE ADDRESS</b></p> <p>City of Jiaxing: <a href="http://www.jiaxing.gov.cn/col/col1591117/index.html">http://www.jiaxing.gov.cn/col/col1591117/index.html</a></p>
<p>6</p>	<p><b>LEAD ORGANISATIONS:</b></p> <ul style="list-style-type: none"> <li>Jiaxing Municipal People's Government</li> </ul>
<p>7</p>	<p><b>LOCAL CONTACT(S)</b></p> <p>Kaoquan Ao Housing and Urban-Rural Development Bureau Jiaxing, China Tel: + 86 0573-8287-2088</p>
<p>8</p>	<p><b>PRINCIPLE UF-NBS (Urban Forests as Nature-Based Solutions) ACTION(S)</b></p> <ul style="list-style-type: none"> <li>Wetland restoration</li> <li>Annual implementation of new plants/trees</li> <li>Urban park construction</li> <li>Reduce the intensity of urban heat island effect</li> </ul>
<p>9</p>	<p><b>OTHER PRINCIPLE NBS ACTION(S) – non-UF</b></p> <ul style="list-style-type: none"> <li>Encourage engagement of citizens in different ways of voluntary tree planting</li> </ul>
<p>10</p>	<p><b>LOCAL STAKEHOLDERS LIST ONLY</b></p> <ol style="list-style-type: none"> <li><b>Governing authorities:</b> Jiaxing Municipal People's Government</li> <li><b>Associations:</b> Jiaxing Society of Forestry, Jiaxing Society of Plant Protection, Jiaxing Society of Landscape, Jiaxing Society of Environmental Science</li> <li><b>Citizens:</b> Volunteer sponsors, residents from neighbourhood</li> </ol>

	<p>4. <b>Municipalities:</b> Municipality of Jiaxing</p> <p>5. <b>Public/private institutions:</b> Jiaxing Institute of Environmental Sciences co. LTD, Jiaxing Planning &amp; Design Research Institute co. LTD, Jiaxing Landscape Design Institute</p> <p>6. <b>Park planner and authorities:</b> Jiaxing Municipal People’s Government, Housing and Urban-Rural Development Bureau</p> <p>7. <b>Technicians for park maintenance/monitoring and to educate and support citizens:</b> Housing and Urban-Rural Development Bureau, Jiaxing Society of Forestry, Jiaxing Society of Plant Protection, Jiaxing Society of Landscape</p>		
11	<b>UF-NBS FRAMEWORK</b>		
a.	<b>UF-NBS typology</b>		Tree rows, single trees, tree and forest plantations, Trees in public parks, along streets and on squares, on cemeteries
b.	<b>Integration</b>		Built-up structure (accompanying buildings); Transport infrastructure (in particular along streets and on squares), Water management system (e.g., watering of street trees and newly planted trees)
c.	<b>Network/connectivity</b>		The location for the plantations is determined by Planning Office and implemented by companies. The local government finance offers the money.
d.	<b>Multifunctionality</b>		Multiple functions are combined with trees with regulating services (carbon sequestration; regulation of micro, local and/or regional climate; shadow; maintenance of air quality; reduction of odour, noise, visual disturbances), supporting functions (habitats and biodiversity for animal and plant species), cultural functions (recreational value, aesthetic pleasure; sense of place, inspiration)
e.	<b>Multi-scale</b>		In the future, the green wedges will be extended according to the urban development or expansion.
f.	<b>Strategic planning processes</b>		Urban Green Space System Planning of Jiaxing (2006-2020) planned three green wedges around the city. The concept of three green wedges has been improved and implemented by the Urban Green Space System Planning of Jiaxing (2006-2020) (Revision 2016), Urban Master Planning of Jiaxing (2003-2020) (Revision 2017) and Master Planning of National Forest City Construction in Jiaxing (2018-2035).
g.	<b>Inter- and transdisciplinary</b>		The three green wedges were planned and implemented by local government. Professionals, experts who are engaged in urban planning, landscape ecology, economy, forestry, transportation, wetlands were involved as well. At the same time, citizens were able to actively contribute to the planning in an extensive participation and coordination process.
h.	<b>Social cohesion and biocultural diversity</b>		Citizens will contribute to the construction of green wedges in different ways of voluntary tree planting
i.	<b>Governance arrangements</b>		I. Project management structure.

				Project contractors: Several organisations and companies were involved when implementing the green wedge strategies. E.g. plantations, urban parks, wetlands parks, botanical gardens.
			II. Local community engagement and the nature of their engagement.	Mainly expert community.
			III. City-scale and/or region-wide governance for the project and/or UF-NBS (city and regional stakeholders and character of their engagement)	There is an ongoing process for the approval of the Master Plan of Jiaxing City led by the municipal government. With the aim of enhancing the structure and socioecological multi-functionality of the green infrastructure in city. The green wedges strategies were based on a socio-ecological-economic analysis of Jiaxing City.
			IV. National and international governance context (national and international stakeholders and character of their engagement)	n/a
			V. Other (specify)	One of the challenges of the governance is how to manage and conserve the current three green wedges in highly urbanised areas, which has a big conflict with urban expansion.
j.	<b>Institutional frameworks</b>	I. Project staff responsibilities.		Communication, Management, Infrastructure, Maintenance, Implementation
		II. Project Management Committee (Y/N) if Y.		Y. Consists of project managers of project coordinator's organisations
		III. Frameworks <u>above the project</u> that exert influence on the project and/or UF-NBS e.g. Municipality, National Forestry Department.		Jiaxing Municipal Government approves the whole project.
		IV. Private companies that work on behalf of/or are embedded within the project.		n/c
		V. Trade representative organisations that are involved in the project		n/a

		VI. Regulatory frameworks that the project operates within (i.e. bylaws, municipal laws, national laws, licences and leases, partnership agreements etc)	Urban and Rural Planning Law of the People's Republic of China
		VII. Other (specify)	n/a
<b>k.</b>	<b>Economic frameworks</b>	I. Community fundraising	n/c
		II. Project delivered services and monies raised by project	n/a
		III. City, regional general funds	Mainly funded by the municipality.
		IV. Special funds e.g. National Lottery, Challenge funds	n/a
		V. National government funds	n/a
		VI. Private sector investment	Very few non-government investments also exists, for various economical purposes such as tourism.
		VII. International funds e.g. European Union structural funds, LIFE + etc.	n/a
		VIII. Other (specify)	n/a
<b>i.</b>	<b>Sino/European comparative relevance</b>		The green wedges strategies in Jiaxing City are a good example for conserving and expanding the existing urban forest and trees in a highly urbanised area.
<b>m.</b>	<b>UF-NBS valorisation</b>		Provides multiple ES for cities and citizens. Also brings more green jobs for local people.
<b>n.</b>	<b>Procurement of UF-NBS</b>		The green wedges strategies were developed by the Master Plan of Jiaxing city. The whole cycle of this project can be summarised into three steps: <ul style="list-style-type: none"> <li>• Approval of the strategies by the municipal government and related bureaus or departments: Master plan;</li> <li>• Developing the green wedge strategies in the Urban Green Space System Plan;</li> <li>• Conducting the strategies by supporting and implementing the urban parks project, afforestation/reforestation project, wetlands restoration, botanical garden and other related greening projects.</li> </ul>



	<p><b>p. Ecosystem services (list the three most important services being provided in no more than 50 words)</b></p>		<p>Multiple functions are combined with trees with regulating services (carbon sequestration; regulation of micro, local and/or regional climate; shadow; maintenance of air quality; reduction of odour, noise, visual disturbances), supporting functions (habitats and biodiversity for animal and plant species), cultural functions (recreational value, aesthetic pleasure; sense of place, inspiration).</p>
	<p><b>q. Renaturing</b></p>		<p>The green wedges strategies consist of several small greening projects, such as the creation of new urban parks, forests or wetlands parks, children’s playground, botanic gardens. During the implementation, commercial land or other built-up area will be changed to plant covered area.</p>
<p><b>12</b></p>	<p><b>LESSONS AND TRANSFERABILITY</b></p> <p>Trees as nature-based solutions are this way promoted for co-development and co-design to alleviate problems of heat, air pollution and noise in the city in a participatory way. In the future, more ways should be explored to encourage citizens to join the planting, protecting and using of trees.</p>		
<p><b>13</b></p>	<p><b>REFERENCES (Harvard style)</b></p> <p>Urban Green Space System Planning of Jiaxing (2006-2020) (Revision 2016), in Chinese</p> <p>Urban Master Planning of Jiaxing (2003-2020) (Revision 2017), in Chinese</p> <p>Master Planning of National Forest City Construction in Jiaxing (2018-2035), in Chinese</p>		