

SHANGHAI

Agro-park in Dongtan Ecocity

The world is developing into an urbanised network society. Metropolitan Areas are becoming the nodes of globalisation. Intensive agriculture (i.e. horticulture, livestock farming) has since long been developing around urban areas. ICT, network-organisation and advanced production technology are driving new inventions to the market. Reliance on the chains that provide the main fresh products is becoming of strategic importance. The consumer is demanding high quality of food and food production methods, forcing retailers into competition on food availability and –safety, quality control and ethics.

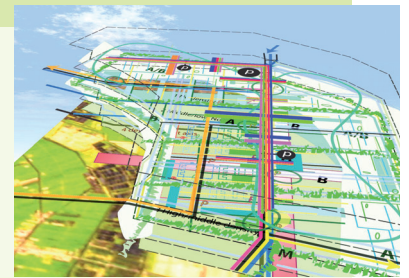


To meet these challenges researchers, government, NGO's and entrepreneurs are together developing the Agropark concept: a system innovation integrating plant (greenhouses, mushrooms) and animal (chicken, pork, dairy, fish) production chains. Agroparks reduce economic costs and environmental effects but also improve product quality and realize synergy in knowledge development and site management. The demonstration park is a showcase for novel products. If there is a market for these products they will be brought in through the trade park or produced within the park. Several of these designs are now being implemented in the Netherlands, China and India.

An Agropark is always a tailor made solution, adapted to the local physical, economical and socio-cultural conditions. The participatory design process ensures that stakeholders will be

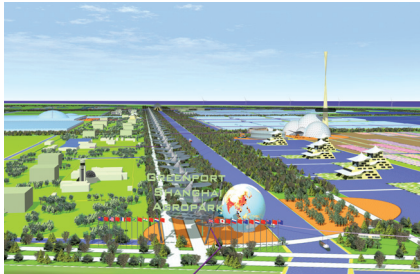
involved in the implementation, operation and maintenance as early as possible.

As part of the design for Dongtan Ecocity near Shanghai, a Master plan has been produced for an Agropark called Greenport Shanghai. The total area covered by the Masterplan is 27 km². The Masterplan contains a structural framework that integrates zoning principles based on intensity gradients with networks of water, landscape ecology, infrastructure and the framework of pipelines for the Central Processing Unit. Within this structural framework a flexible implementation of agro-production and processing is elaborated, for which several scenario's can be elaborated.

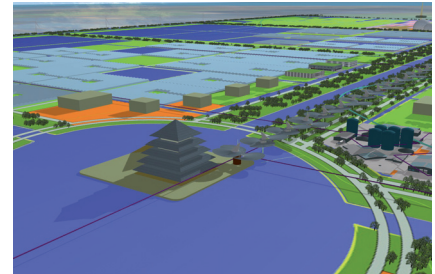
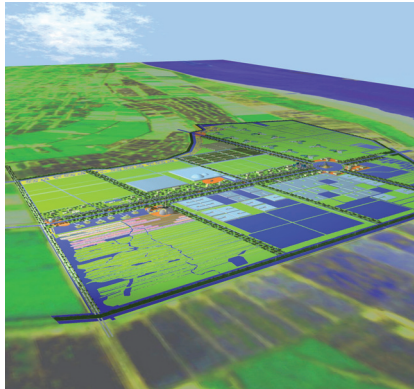
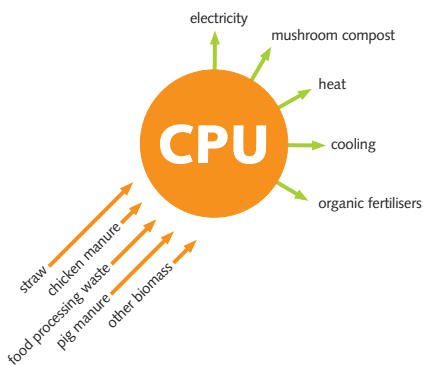


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Within the CPU various biological conversion processes are used to manage the flows of matter and energy in the Agropark.



Scenario nr.	1	2	3	4
Area facility agriculture (ha)	93	608	233	107
Power surplus (mln kWh/y)	-0.9	260	52	80
Nr of pigs (*1000)	50	1.000	1.000	50
Nr of chicken (mln)	2	7	3	2
Nr of cows (*1000)	0	0	0	8
Vegetables (1000 tons/y)	9	240	50	24
Mushrooms (1000 tons/y)	6	30	0	6



Four scenario's that together explore combinations of entrepreneurial investments decisions have been elaborated. Not every combination is possible because optimal CPU processing requires delicate balancing.