The Bec Hellouin farm
An experimental permaculture & agroecology farm in Haute-Normandie, France
Combining production & preservation of the environment
2006: establishment of “La Ferme biologique du Bec Hellouin”

- 20 hectares
- organic certification by EcoCert
- 4,000 m² of fruit & vegetable production with draft animal power
- Arboriculture and berries
- Medicinal plants
- 800 crop varieties
- Farm-made products
- Educational activities
Initial vision: a highly productive small-scale family farm

The aim was to create an edible landscape with an important role for trees, inspired by traditional rural landscapes.
• In 2008 we discovered Permaculture – a holistic design system based on the observation of natural ecosystems, developed in Australia in the 1970s

• Its objective is the creation of human systems that are environmentally sustainable and socially fair, efficiently using resources and energy, while generating high yields
• Permaculture design links different elements of a given system by creating mutually beneficial relationships
• All ‘wastes’ are recycled within the system, thus increasing self-sufficiency and resilience
• As in ‘natural’ ecosystems, every element fulfils certain functions and every important function is fulfilled by several elements.
• The whole is more than the sum of its parts!
• Permaculture is not an agricultural technique, but a design system. It has not yet been widely applied to food production.
Permaculture design integrates services rendered by ecosystems
Permaculture: get inspired and mimic nature
The innovative synthesis at Bec Hellouin: an alliance of inherited traditional knowledge and recent scientific findings within a design based on permaculture principles.
A historical precedent: vegetable production in Paris between 1840 - 1930

- 600 hectares of 1,000 - 4,000 m² plots cultivated inside the city walls were feeding the city with a production of remarkable quality
- The “maraîchers parisiens” managed up to 8 crop rotations a year due to numerous crop associations
- We seek to revive such forgotten techniques
Towards an ethical agriculture

- Care for the Earth
- Care for People
- Fair distribution of surplus (return surplus to “Earth” and people)

- Products are sold locally (CSA/AMAP basket scheme) and in Paris (restaurants)
- Job creation: the farm now has 8 employees
- Assisting individuals in setting up their own permaculture farms
- Courses to pass on the farm’s methods
The farmers of tomorrow will not cultivate the land with methods of the past! We have to invent new ways of growing food to feed the world while respecting the needs of the planet.
Reconcile environmental performance with....
... Economical performance!
Bio intensive farming at the hart of the farm
The study with AgroParisTech University & INRA

- In December 2011, the study was started in cooperation with the SADAPT unit of AgroParisTech University and INRA, to show that an area of 1,000 m² of diverse organic fruit & vegetable production cultivated only by hand can generate a decent income for one person.

- Results of the study confirmed that the yield produced on 1/10 ha cultivated with the farm’s bio-intensive methods is equivalent to that produced on 1 ha cultivated with mechanised organic methods.

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The study with AgroParisTech University & INRA

- 1,000 m² of diverse vegetable production and agroforestry plots were selected for the study
- All data were registered (inputs, labour, production in quantity & value etc.)
- The goal was to create a new model of small-scale diversified farms ("micro-farms" with 1,000 m² - 1 ha surface area)
These farms are not small versions of large, mechanised farms, but rather large versions of small household gardens.

They are cultivated manually using various specific methods.

Compared to the conventional farm model, micro-farms:
  - are easier to establish, particularly in an urban setting
  - require 10 times less land
  - have lower initial investment and running costs (no mechanisation)
  - potentially offer a higher standard of living
Economical performance
...with specific technics inspired by nature
Permanent raised beds

- Practiced for centuries: it respects the soil and its life and enhances biodiversity.
- The soil on which our attention is focused, is healthier and more fertile.
Nature patterns show us the way
Permanent beds
Agroforestry: growing vegetables in the middle of trees
Everything is made by hand to:

– Take care of the soil
– Densify crops
– Associate crops
In order to work by hand, you need efficient and innovative tools.
We have created a new tool: La Campagnole

It respects the soil, is economical and sustainable. It enables you to work faster than with a motorized cultivator!
Vegetables all year long
Crop densification
Stacking: for a better use of space and sun
Thanks to stacking, productivity is enhanced
Crops association for diversity and better cooperation
Plants and trees share resources and care
Nous expérimentons au Bec Hellouin les vergers maraîchers : une forme d'agroforesterie associant arbres, petits fruits, légumes et plantes aromatiques.

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Agroforestry and the lessons taught by guilds
Ecological performance enables economic performance
From steppe agriculture ..
... to a lively and productive agrosylvopastoralist eco-system
Trees and shrubs are pillars for the system.
Ecosystemic services are a product and a ressource of the system
Permaculture inspired micro-agriculture creates humus, captures carbon in trees and soil and improves biodiversity. It creates jobs, beautiful sceneries, secures food chain, and creates links between people in communities…

…while producing a lot of good and quality food!
A new way to « use » the soil
Think global, close cycles, multiply all functions
One hectare of organic vegetable production...

Almost all surface is dedicated to crops!
One hectare of vegetable market production according to permaculture principles.

1/10° of the space is dedicated to crops; the remaining space is freed for different uses.
In the intensive heart of the farm, 1,500 m² are dedicated to crops.
Miraculous Abundance
One Quarter Acre, Two French Farmers, and Enough Food to Feed the World

Perrine and Charles Hervé-Gruyer
Foreword by Eliot Coleman

Ecole de Permaculture du Bec Hellouin
Let us imagine an agriculture that replaces fossil fuels with the sun!

An agriculture that restores the soils, sequesters carbon, produces an abundance of nutrient-rich food, all while creating employment and more dynamic communities.