

BUGI

Western Balkans Urban Agriculture Initiative

Problem based learning in Urban Agriculture Experiences from FH SWF

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Fachhochschule
Südwestfalen
University of Applied Sciences



BUGI „PBL Workshop“, Sarajevo, June 2019



URBAN GREEN TRAIN

The project and the outputs



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



URBAN GREEN TRAIN

Urban Green Train

- URBAN Green
Education for
ENTteRprising
Agricultural
INnovation
- Training



URBAN GREEN TRAIN

Urban Green Train

- Environmental technologies
- Eco-friendly products and services
- Sustainable design and healthy food



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Training offer

- Lack of resources targeting professionals
- Lack of resources on certain themes
- Lack of specific learning forms



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New business
model demands

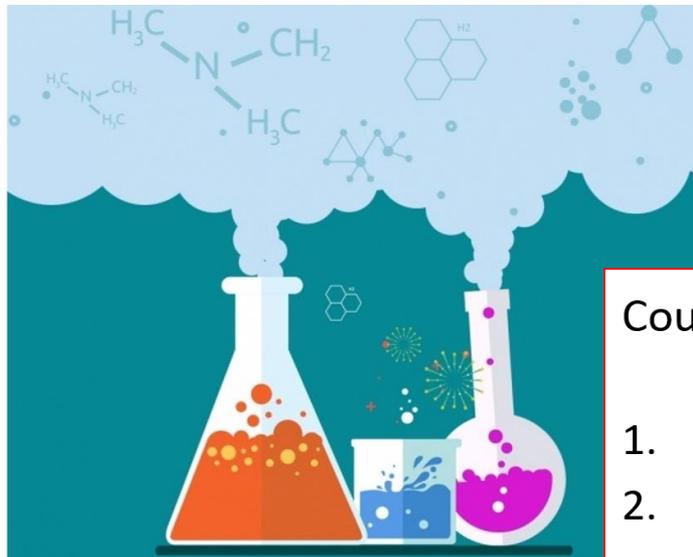
+

Training offer

+

Training needs

Resulted in...



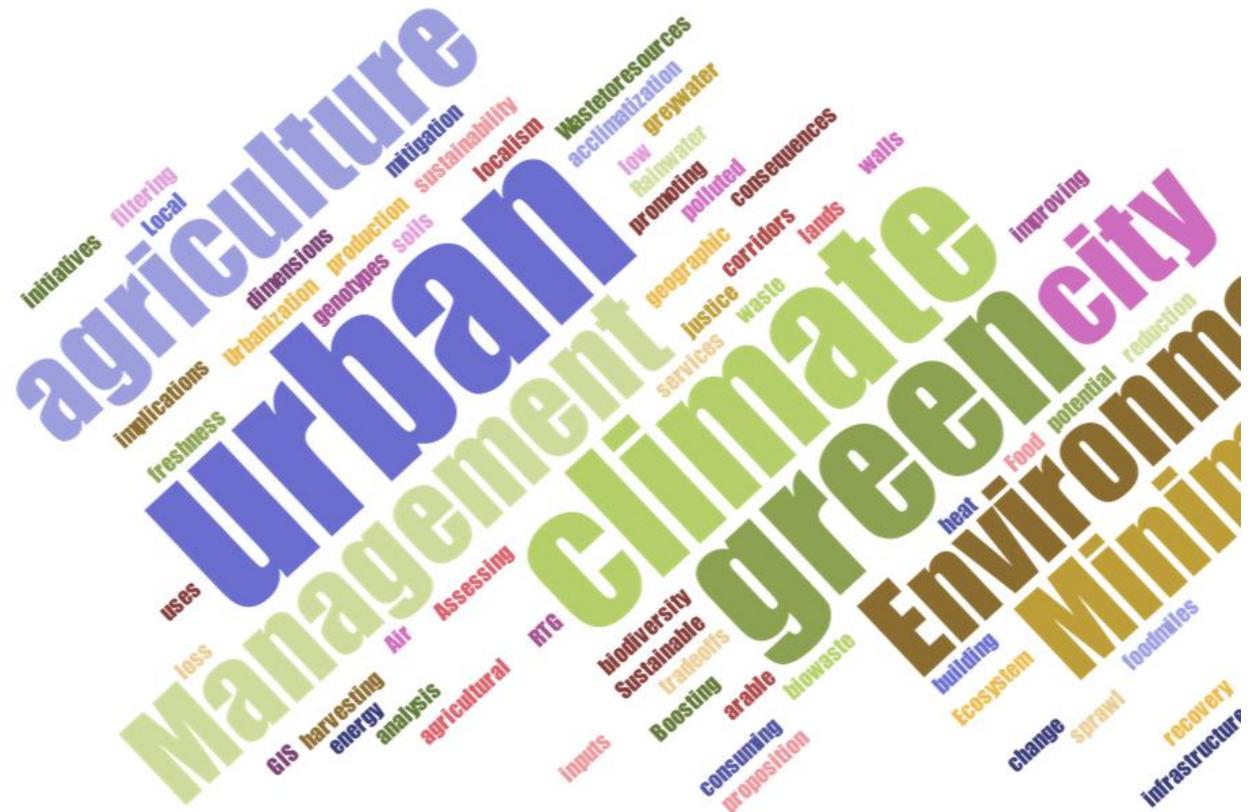
Course modules (total 150 hours):

1. Introduction into UA concept and types
2. Resource use from a challenge perspective
3. UA types/production systems & short food chains
4. Networking and governance
5. The world of business and urban demands

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Module 2: Resource use from a challenge perspective

- Biodiversity and ecology
- Resource efficiency
- City climate



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Module 3: UA types/production systems & short food chains

- Types of urban agriculture
- Innovation



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Module 4: Networking and governance

- Governance issues and networking
- Legal and policy issues
- Networks and businesses

Introduction
networking Networks
Policy lobbying

recommendations
dimensions instruments
urban
agriculture

limit

courses

action

Governance
Examples

reg

Problem based learning: Example business

Personen  

Teilnehmer/innen

Navigation  

Dashboard

Startseite

Website

Meine Kurse

- SemDiNi|AW-B|PS|SoSe19
- AS|AW-B|PS|WiSe18/19
- ▾ **UrbaneLW|AW-B|PS|WS18/19**
 - Teilnehmer/innen
 - Auszeichnungen
 - Kompetenzen
 - Bewertungen
 - 1: Introduction to urban agriculture concept and t...
 - 2: Resource use from a challenge perspective
 - 3: Urban Agriculture types/production systems and ...
 - 4: Networking and Governance
 - Modules' summaries (pdfs)
 - Presentations WS 2017/2018
 - Thema 7
 - Thema 8
 - Thema 9
 - Thema 10
 - Thema 11
- UL-AQP|AW-B|PS|SoSe18
- AgSo|AW-B|PS|WiSe17/18
- MaFo|AW-B|PS|WiSe17/18
- UrbaneLW|AW-B|PS|WiSe17/18



International course on Entrepreneurship in Urban Agriculture within the project ERASMUS+ URBAN GREEN TRAIN

www.urbangreentrain.eu

1: Introduction to urban agriculture concept and types



Suche in Foren  

Erweiterte Suche 

Neue Ankündigungen  

Neues Thema hinzufügen...

(Keine Ankündigungen im Forum)

Aktuelle Termine  

Keine weiteren Termine

[Zum Kalender ...](#)

Kalender  

◀ Juni 2019 ▶

Mo	Di	Mi	Do	Fr	Sa	So
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

-   Website-Termine verbergen
-   Kursbereich-Termine verbergen
-   Kurs-Termine verbergen
-   Gruppe-Termine verbergen
-   Nutzer-Termine verbergen

Problem based learning

Overview of two examples

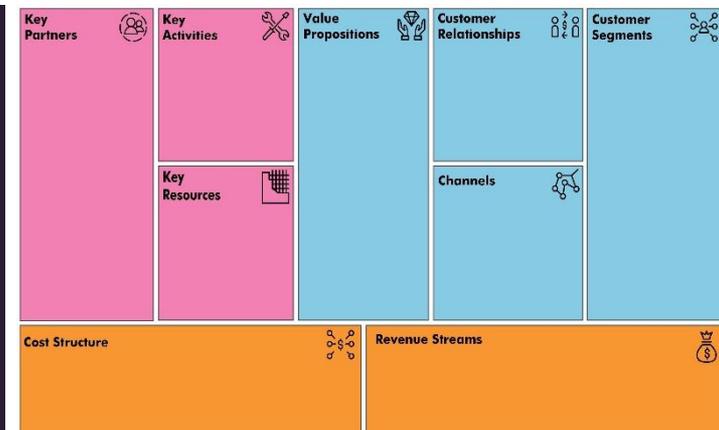
Department of Agriculture (FH SWF)

1. Developing a business idea and plan in UA (business)
2. UA as a new use of post-industrial sites (site)

Business idea and business plan in UA

Key elements

1. Developing an own business idea in UA
2. Refining the business idea (incl. group work sessions)
3. Business Model Canvas
4. Business Plan



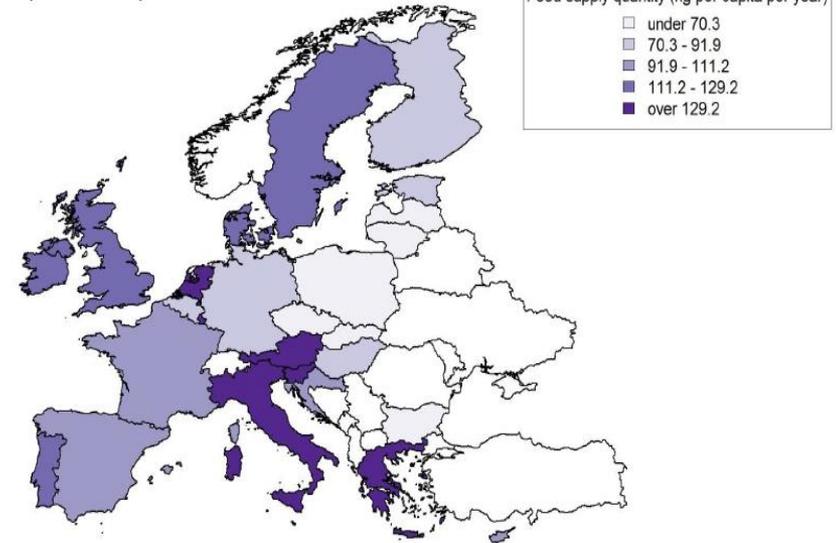
Developing an own UA business idea

- Background information
 - Basics in (green) entrepreneurship
 - Urban market theory and consumer demands
 - Qualitative market research
- Formats
 - Presentations
 - Excursions
 - Expert talks
 - ...

Developing an own UA business idea

- Learning objectives
 - To put the customers at the heart of your UA business idea
 - To be aware of the food and urban food market
 - To be able to consider consumer demands and behaviours
 - To know about (qualitative) market research (incl. methods)

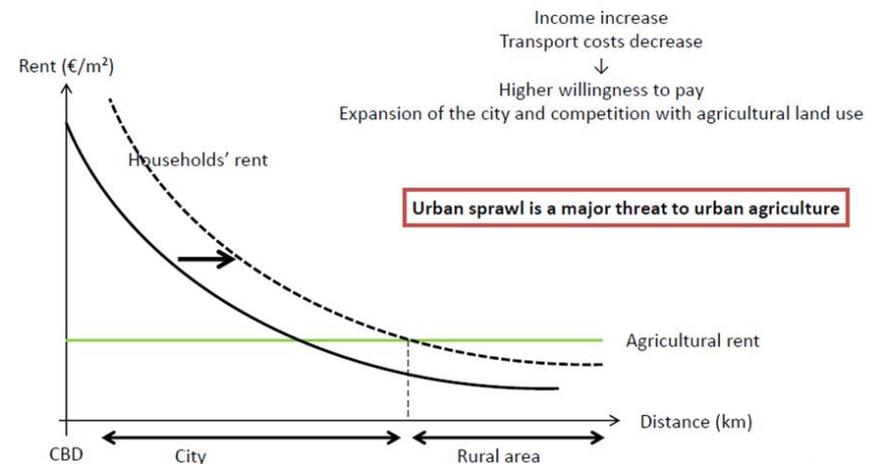
European comparison



Consumption of fruits in European countries (mean 2000-2011)

Author: T. Coisnon 2016 - Data source: FAOstats Food Balance 2011

The case of residential location choice



Developing an own UA business idea

- Think about your own UA business idea!
 - open minded
 - small group talks
 - youtube videotapes
 - ...
- Elevator pitch
 - short Presentation
 - convince a person
 - in 2 minutes

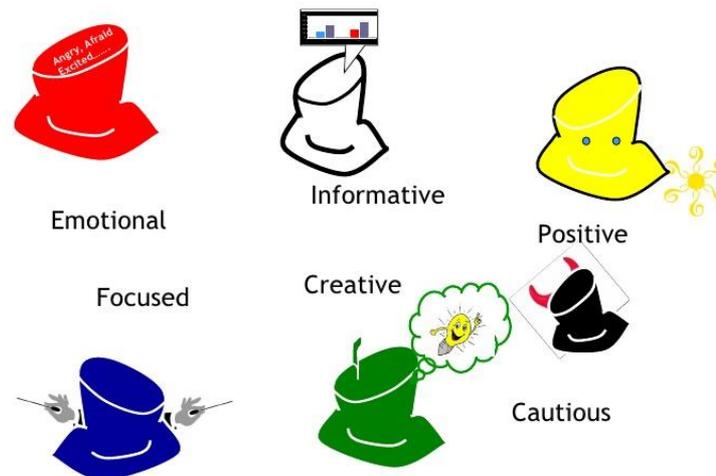


Refining the business idea

- Selection of „best“ elevator pitches
- Refining the business idea
 - Individually
 - In small groups
- Formats
 - Six Thinking Hats
 - SWOT Analyses of Business Ideas



Six Thinking Hats- Summary



Business Model Canvas

- Introduction (presentation + examples)
 - definition of Business Model
 - emerged in 1990s
 - „who“, „what“, and „how“

“A business model describes the rationale of how value an organization creates, delivers, and captures value”

Osterwalder and Pigneur 2009: 14

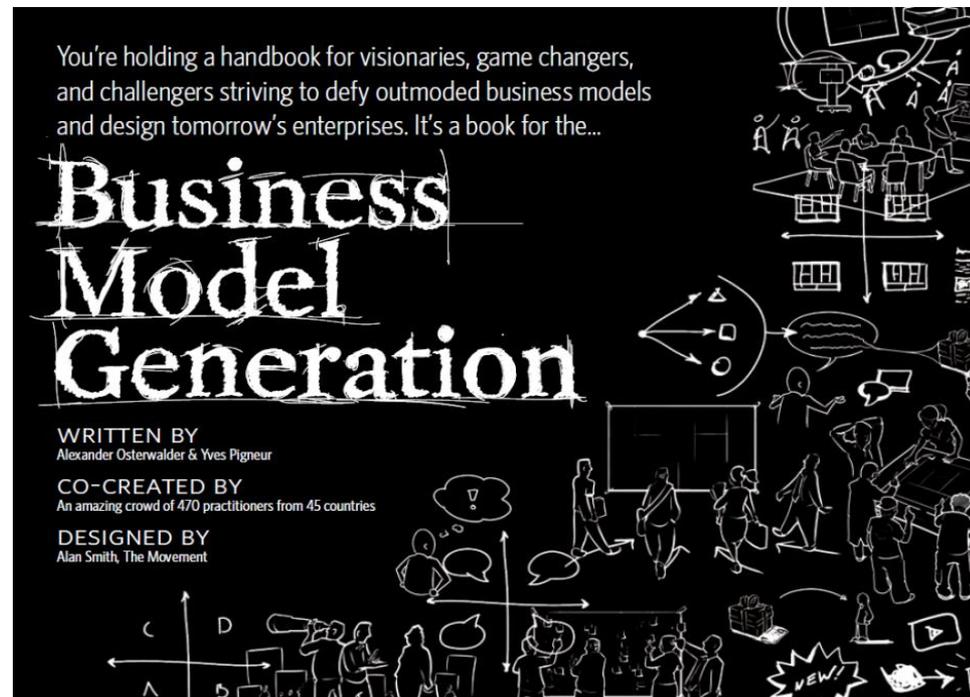
“The business model explains how value is created for the customers and how value is captured for the company and its stakeholders”

Henriksen, Bierre, Almasi, Damgaard-Grann 2012: 31

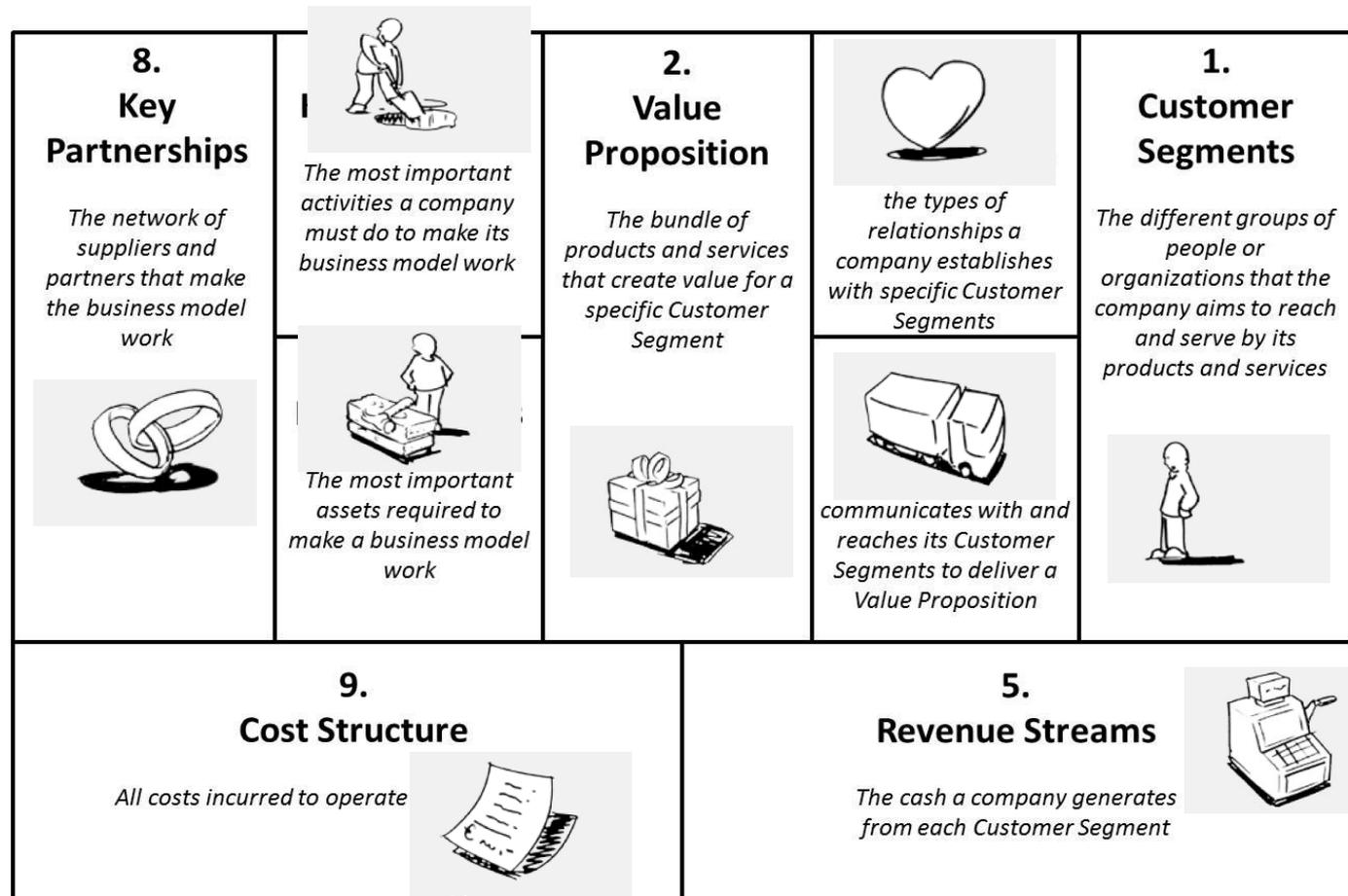


Business Model Canvas

- Strategic management template by Osterwalder & Pigneur, 2009
- Nine basic building blocks (s. following slide) oriented towards customers, offer, infrastructure, and financial viability
- Tool to
 - Emphasize key success factors
 - Detect barriers / problems
 - Compare competitors
 - Create new ideas and BM
- Already used to analyze urban agricultural case studies, e. g. in NL, U.S., Vietnam, Latin America



Business Model Canvas

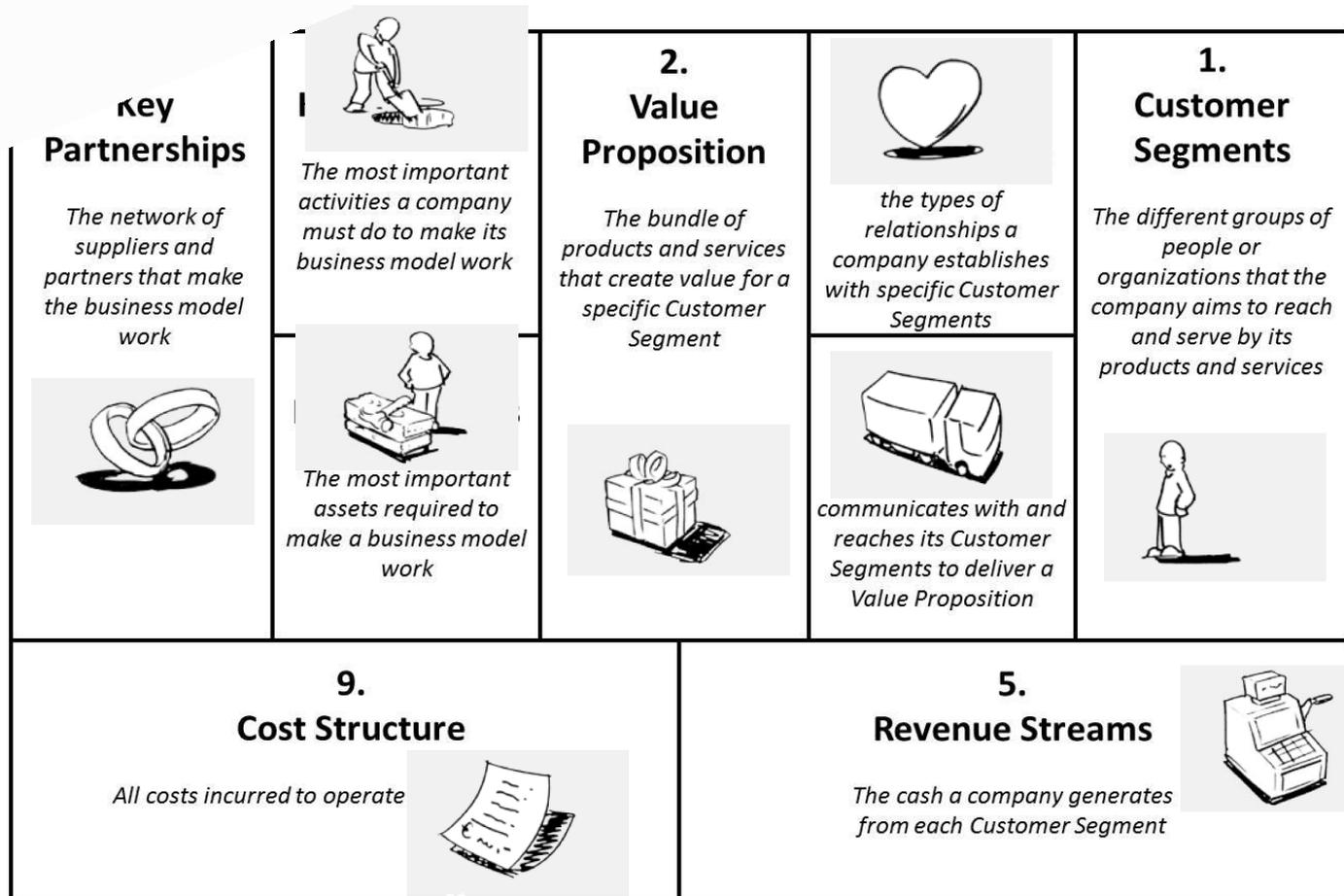


① PLOT THE CANVAS ON A POSTER

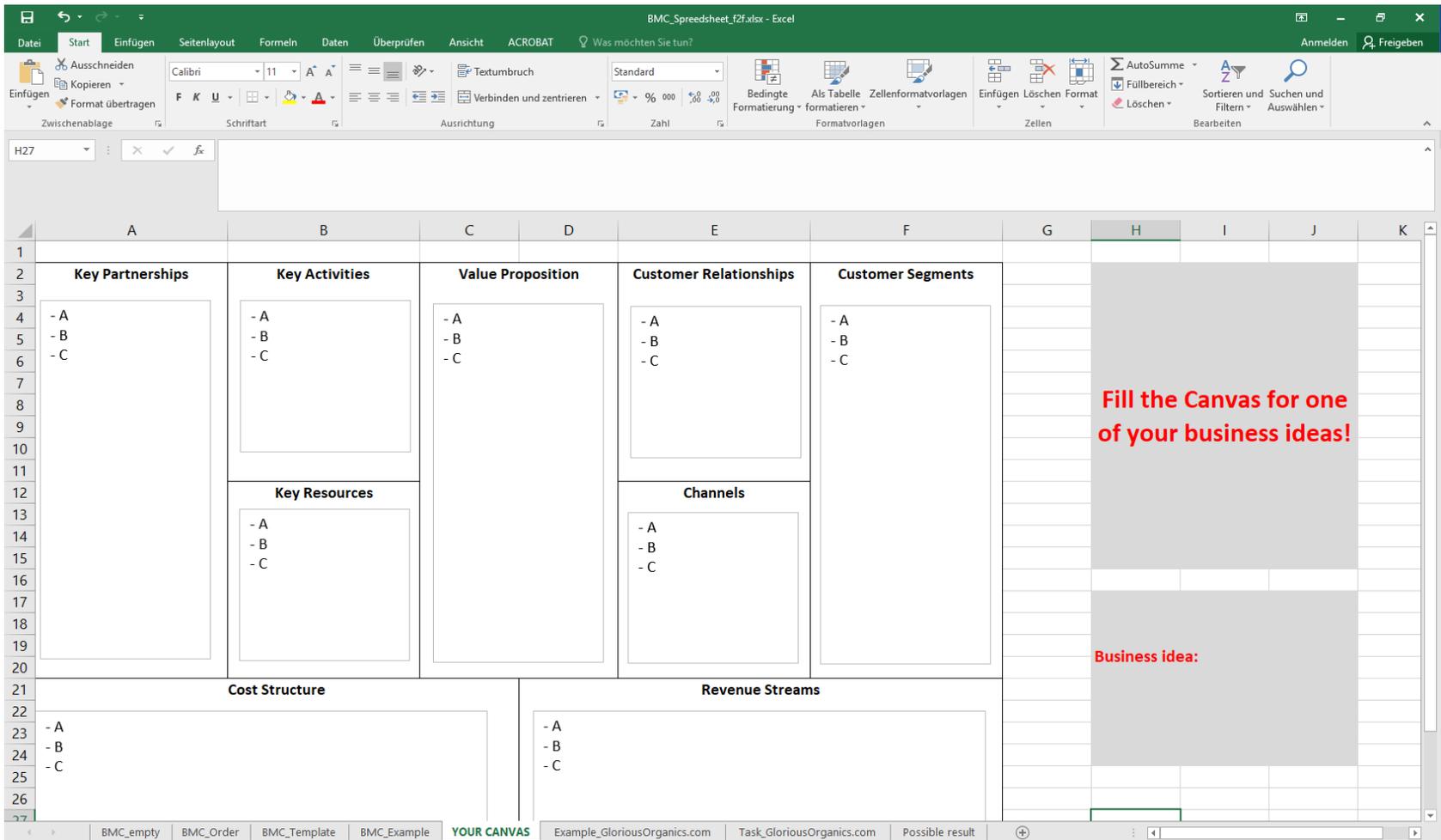
② PUT THE POSTER ON THE WALL

③ SKETCH OUT YOUR BUSINESS MODEL

Model Canvas



Business Model Canvas



The screenshot shows an Excel spreadsheet titled "BMC_Spreadsheet_f2f.xlsx - Excel" with a ribbon menu at the top. The spreadsheet is set up as a Business Model Canvas template with columns A through K and rows 1 through 27. The canvas is divided into several sections:

- Key Partnerships** (Columns A-C, Rows 2-6): - A, - B, - C
- Key Activities** (Columns B-C, Rows 2-6): - A, - B, - C
- Value Proposition** (Columns C-D, Rows 2-6): - A, - B, - C
- Customer Relationships** (Columns D-E, Rows 2-6): - A, - B, - C
- Customer Segments** (Columns E-F, Rows 2-6): - A, - B, - C
- Key Resources** (Columns B-C, Rows 13-15): - A, - B, - C
- Channels** (Columns D-E, Rows 13-15): - A, - B, - C
- Cost Structure** (Columns A-C, Rows 22-26): - A, - B, - C
- Revenue Streams** (Columns D-F, Rows 22-26): - A, - B, - C

A large grey box on the right side of the spreadsheet (Columns H-K, Rows 2-26) contains the text:

Fill the Canvas for one of your business ideas!

Business idea:

The bottom status bar shows several tabs: BMC_empty, BMC_Order, BMC_Template, BMC_Example, **YOUR CANVAS**, Example_GloriousOrganics.com, Task_GloriousOrganics.com, and Possible result.

Business Model Canvas

- Further adjustments before starting to write a business plan:
 - Mirrored back into the small working group and plenum
 - Consultations (advisors, lectures, experts, etc.)
 - ...

BMC_Spreadsheet_f2f.xlsx - Excel

	A	B	C	D	E	F	G	H	I	J
1										
2	Key Partnerships	Key Activities	Value Proposition		Customer Relationships	Customer Segments				
3										
4	- CSA community	- Organic production	- 30 varieties of certified organic vegetables, legumes, herbs, fruits, and flowers		- personal	- People requesting local, organic products				
5		- Direct sale			- individual					
6	- Organic farming association (certification)	- Events/Services	- direct sale (restaurants, farmers markets, CSA)		- automated (web orders)	- Restaurants				
7						- CSA members				
8	- Neighboring farms for joint events (e. g. common dinner)		- Kids farm camp			- Kids and adults interested in formations				
9		Key Resources	- Mushroom cultivation workshops		Channels					
10	- Restaurants	- Land			- farmers markets					
11		- Employees								
12		- organic production (certified)	- Beekeeping course		- restaurants					
13		- Web site (for orders)	- Common dinner		- CSA pick-up					
14		- CSA community			- web orders					
15										
16										
17										
18										
19										
20										
21	Cost Structure			Revenue Streams						
22	- Production costs + processing, purchase (web), and delivery of products			- Direct sale via farmers markets, to restaurants, and via CSA						
23				- Services (Events: Kids farm camp, workshops/courses, dinner)						
24	- Organization and implementation of events									
25	- Management / Logistics of web orders									
26										
27										
28										
29										
30										
31										
32										

Fill the Canvas for a urban agriculture farm of your choice!

Here: Organic vegetable farm with direct sale and education services for children in peri-urban Vancouver
<http://www.gloriousorganics.com/>

BMC_empty | BMC_Order | BMC_Template | BMC_Example | YOUR CANVAS | Example_GloriousOrganics.com | Task_GloriousOrganics.com | Possible result

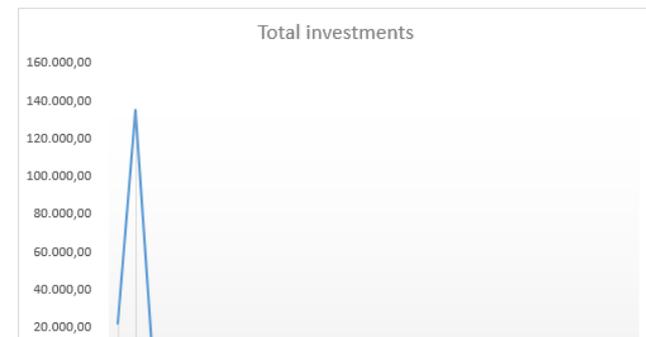
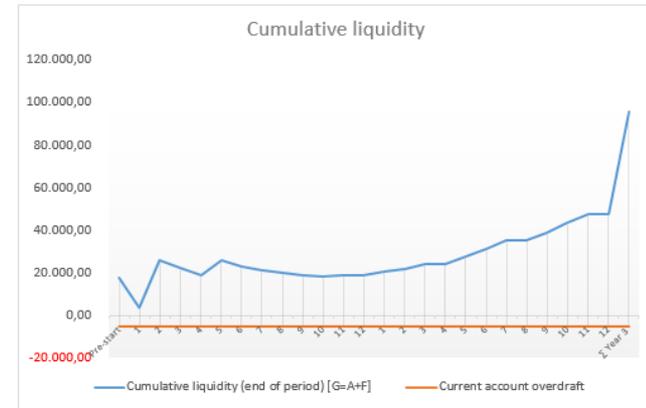
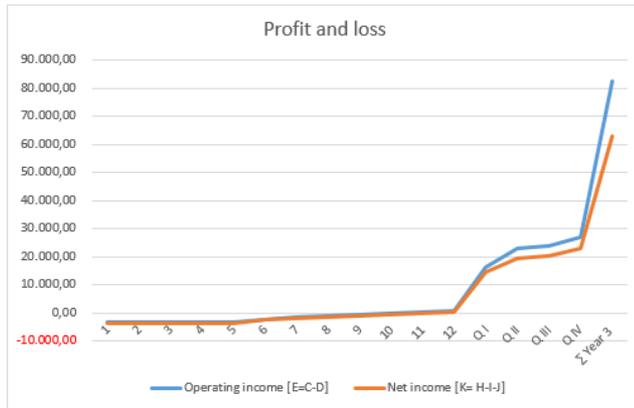
Business plan

- is a "ticket" to your own enterprise
- is a plan / a schedule, how your business idea can be transferred into practice
- is your most important planning tool for starting a new enterprise
- informs other persons and institutions about your objectives and the measures to reach them
- serves as a basic document for negotiations with banks, investors, advisory services, business partners
- is often the base of their decision to support you / to cooperate with you or not!

Business plan

- 1 Summary
- 2 Personal data of the founder(s)
- 3 Business idea: product(s) and/or service(s)
- 4 Market and competition
- 5 Marketing
- 6 Organisation and staff
- 7 Legal form
- 8 Chances and risks
- 9 Financial planning and financing
- 10 Attached documents

Business plan



Business plan

	B	C	D	E	F	G	H	I	J	K	L	M
1 Profit and loss forecast												
2												
3												
4 Period	Year 1											
	1	2	3	4	5	6	7	8	9	10	11	12
50 Total cost of goods sold [B]	0,00	0,00	0,00	0,00	0,00	1.000,00	1.500,00	2.000,00	2.500,00	3.000,00	3.500,00	4.000,00
51												
52 Gross profit [C=A-B]	0,00	0,00	0,00	0,00	0,00	1.000,00	1.500,00	2.000,00	2.500,00	3.000,00	3.500,00	4.000,00
53												
54 Operating Expenses												
55 <u>Wages and salaries (from "HR Planning")</u>	0,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00	2.400,00
56 <u>Outside services</u>												
57 <u>Telephone and internet</u>												
58 <u>Rent</u>												
59 <u>Utilities</u>												
60 <u>Depreciation (from "Investments and depreciation")</u>								779,76	779,76	779,76	779,76	779,76
61 <u>Insurance</u>												
62 <u>Repairs and maintenance</u>												
63 <u>Advertising and marketing</u>												
64 <u>Patents and licenses</u>												
65 <u>Other expenses</u>												
66 Total operating expenses [D]								3.179,76	3.179,76	3.179,76	3.179,76	3.179,76
67												
68 Operating income [E=C-D]								1.179,76	-679,76	-179,76	320,24	820,24
69												
70 Non-operatings revenues [F]												
71												
72 Non-operating expenses [G]												
73												
74 EBIT [H=E+F-G]								1.179,76	-679,76	-179,76	320,24	820,24
75												
76 Interest expense [I] (from "Loans")						320,83	320,83	320,83	320,83	320,83	320,83	320,83
77												
78 Income taxes [J] (enter tax rate in "Assumptions")							0,00	0,00	0,00	0,00	0,00	99,88
79												
80 Net income [K= H-I-J]											0,60	399,52
81												
82												

Wages and salaries will usually be one of the major cost factors. The
 Not every job or activity will be done by yourself or your
 Nowadays communication is everything. Of course
 Most likely you will not buy an office building or other
 This position is closely related to rent. It contains
 If you buy a tangible asset for your company, like for example a machine, the
 Depending on the business you do you might need certain insurances. Like
 The more machines, vehicles, equipment etc. usually the latter is highly
 The expenses for marketing depend on your
 Many knowledge based start-ups rely on intellectual
 property which might be protected by patents or
 insurance premium
 and is negotiable.
 you normally pay an upfront payment once in the
 beginning and periodic royalties. But not only high-
 tech start-ups obtain licenses. Also a "simple"
 franchise business needs to acquire a license to use
 Non-operating revenues are income that does not
 stem from the core operations. Most of these
 This position includes one-off or unusual costs
 which do not result from the core operations.
 In a start-up those costs may emerge rather
 seldom. But normally non-operating expenses
 In case you finance your business by debt, like bank loans or
 shareholder loans you will have to pay interest. Other than
 the repayment rates of a loan interest payments are costs
 which reduce your profit and have to be recorded here.

Example

FINANCIAL PLAN

COGS

Added Value Service

1,18€ Water/year
for one container

Phytoremediation

Seeds	1,06€/m ²
Analysis	0,3€/m ²
Machinery	0,016€/m ²
Fuel	0,0065€/m ²
Total	1,39€/m ²

INVESTMENTS

	start month	cost	duration
Containers 1	1	\$75,000	96
Containers 2	4	\$37,500	96
Containers 3	5	\$112,500	96
Containers 4	10	\$337,500	96
Containers 5	13	\$75,000	96
Containers 6	16	\$37,500	96
Containers 7	17	\$112,500	96
Containers 8	22	\$337,500	96
start up	0	\$14,500	forever
Total		\$1,139,500	

SALES

Bio-remediation	\$	rent containers	\$
10,000	\$150,000	750	\$22,500
5,000	\$75,000	375	\$11,250
15,000	\$225,000	1125	\$33,750
45,000	\$675,000	3375	\$101,250
10,000	\$150,000	750	\$22,500
5,000	\$75,000	375	\$11,250
15,000	\$225,000	1125	\$33,750
45,000	\$675,000	3375	\$101,250
Total	\$2,250,000		\$337,500
			\$2,587,500

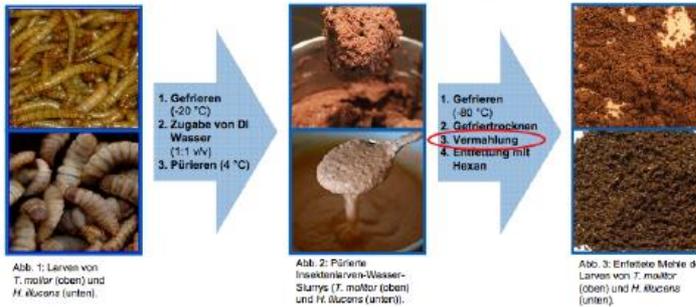
Investments and sales happen at the same time

Example

Gewinnung von Mehlen aus Speiseinsekten:

Mehlwurm (*Tenebrio molitor*) und Schwarze Soldatenfliege (*Hermetia illucens*)

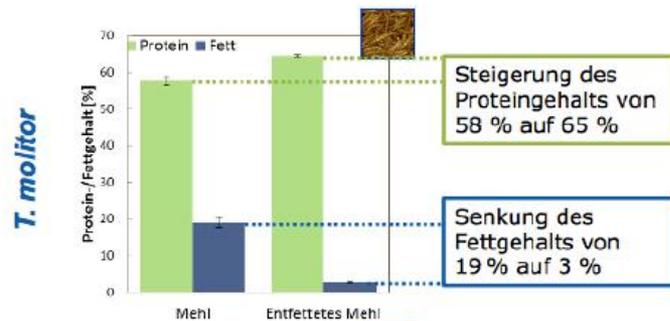
- Separation der Larven vom Substrat (Sieben)
- Möglichst schonende Tötung der Larven
- Vermeidung thermischer Effekte während der Prozessierung



2)

Entfettung der Insektenmehle:

Einfluss auf Fett-/Proteingehalte und Technofunktionalität



Investment Planning

Period	Pre-start
Investments	
Long term assets (from "Investments and depreciation")	
Machines	10.000,00
Property	0,00
Equipment	3.200,00
Intangible assets	0,00
Other assets	0,00
Current assets	
Inventory	
Working fund	
Start-up costs	
Notary	1.000,00
Business registration	1.000,00
Consulting	
Lawyer	500,00
Marketing	500,00
Website	1.000,00
Other start-up costs	5.000,00
Total Investments	22.200,00

s. Investment Planning in SWICE Carmen Kammer

Grafik zur kumulierten Liquidität:



Auszug aus SWICE Carmen Kammer

Examples



Food assembly



Mobile hens with direct sale

Problem based learning

Overview of two examples

Department of Agriculture (FH SWF)

1. Developing a business idea and plan in UA (business)
2. **UA as a new use of post-industrial sites (site)**

UA reuse of post-industrial sites

Key elements

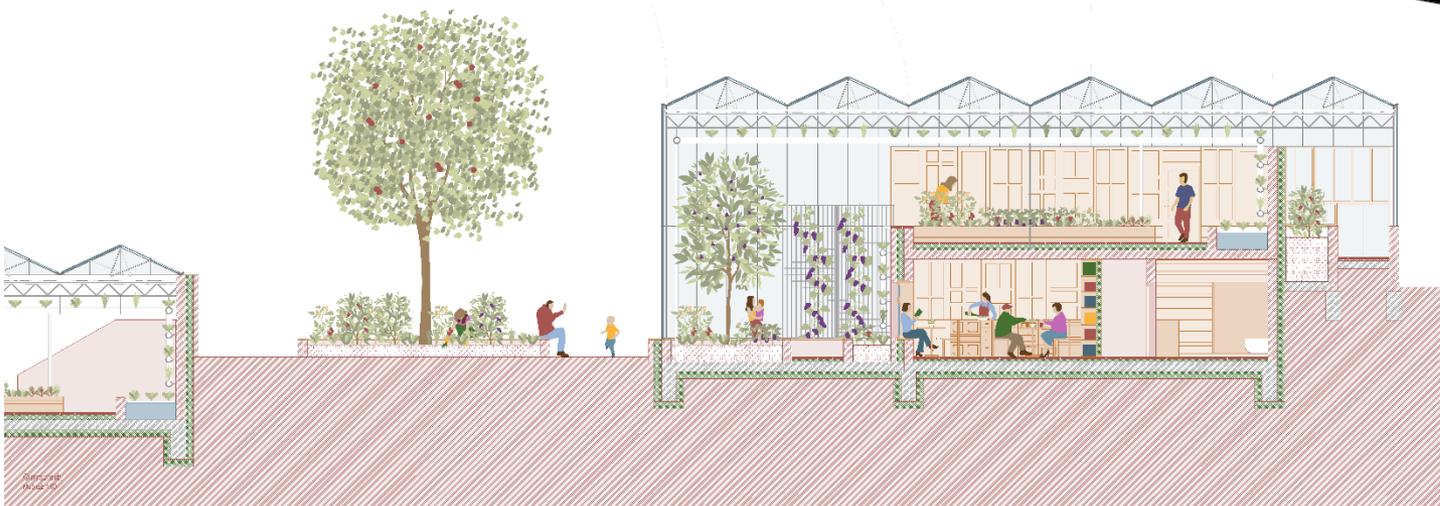
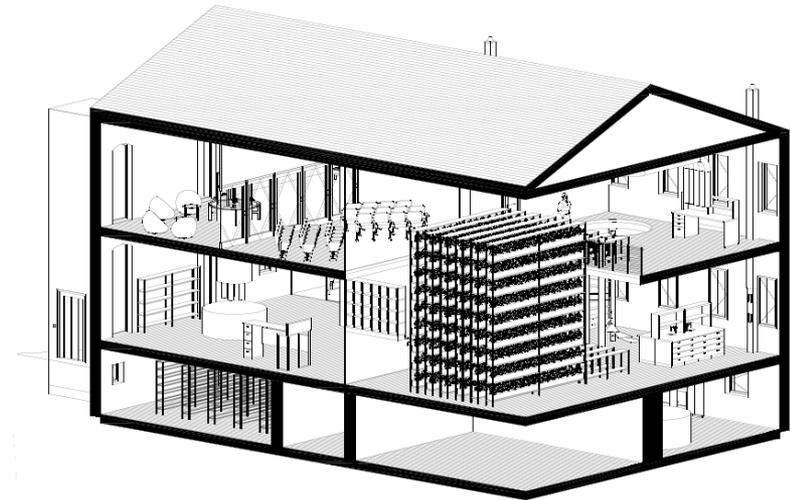
- Site visits / analysis
- Developing an own usage concept in UA
- Refining the idea
- Business Model Canvas
- Business Plan

Site visits / analysis

- Key for successful planning of a specific location
- Interdisciplinary working groups
- Working together with another Department, e. g.
 - Landscape Architecture // RWTH Aachen University
 - Spatial Planning // TU Dortmund
 - ...

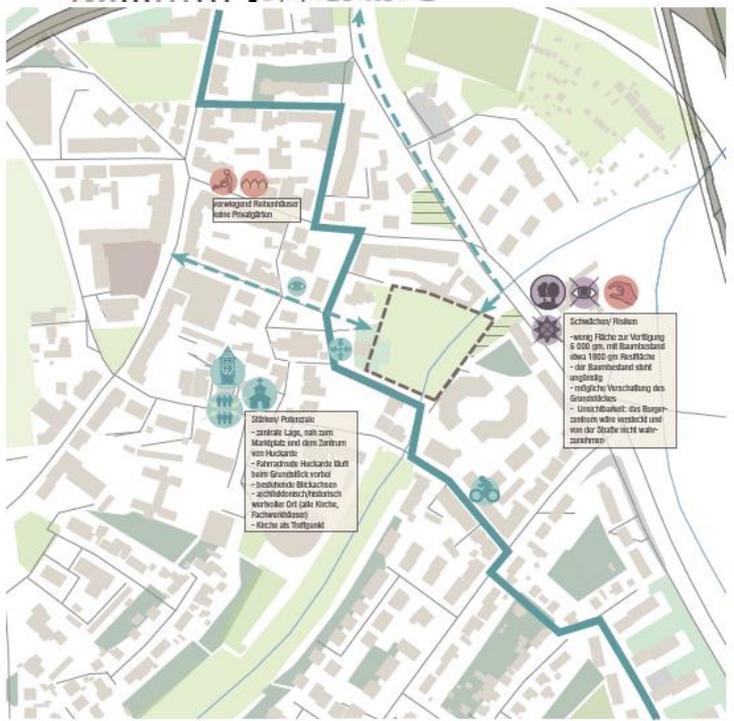
Site visits / analysis

- Soil-less production systems
- Technological innovations in UA
- ...



BUGI

Western Balkans Urban Agriculture Initiative



Swotplan M 1:2000

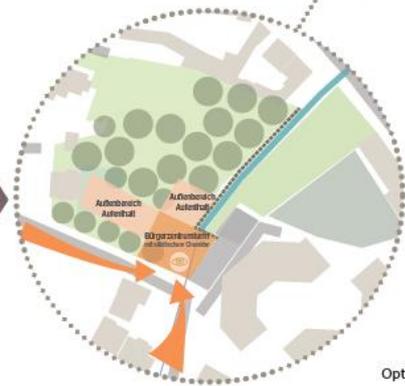


Rahmenplan M 1:1000

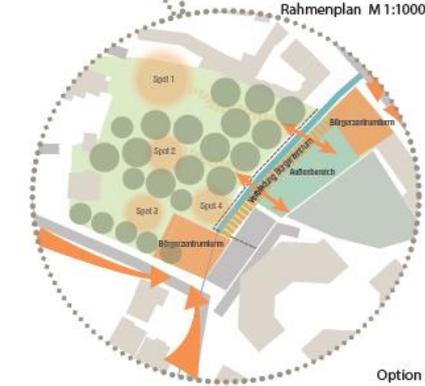
- Legende:**
- Risiken
 - Schwächen
 - Stärken



Vision - offene Zugang von der Straße



Option 1



Option 2

Site visits / analysis

- Not limited to post-industrial sites
 - Can be done everywhere
 - Peri-urban areas / city-adjustments of professional, market-oriented farms
 - ...
- Not limited to Urban Agriculture
 - Vitality of rural countrysides
 - Strategies for farms and villages to maintain structures
 - ...

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Dr. Bernd Pölling
Fachhochschule Südwestfalen (FH SWF)

Fachhochschule
Südwestfalen
University of Applied Sciences



BUGI „PBL Workshop“, Sarajevo, June 2019