



Garden (Assenmacher (CC BY-SA, 3.0 Lizenz))

## Mobile cultivation beds (德国)



**Mobile vegetable cultivation system for urban areas with "baker boxes" as main elements.**

The main technology applied in the urban gardening project "Princess gardens" can be described as mobile vegetable cultivation system based on the use of "baker boxes". "Baker boxes" are plastic boxes (size: average area of 40 cm x 60 cm x 35 cm) made out of heat-resistant materials, which do not contain softeners. The bottom part as well as the side parts are formed in a grid pattern (holes of 1cm<sup>2</sup> size).

For the vegetable production, cultivation units ("box towers") are built out of two boxes by placing them on top of each other. The lower box is filled with organic material (composition of the material like in a compost) and the upper box is filled with garden mould (or other earth material suitable for cultivation). To prevent the washing out of earth material through the grid pattern, carton is put on the bottom as well as on the side walls of the upper box. During a period of time (length can vary from 1 to 3 years) the upper box can be cultivated according to the principles of "good practise" (e.g. crop rotation). During this time, the lower box serves as compost. In the course of each year this box is checked if the ongoing decomposition processes have lead to the creation of free space in the box. In this case, organic material needs to be refilled.

In the end of the 1-3 years-cultivation period the upper box is emptied and the contained earth material can be used for purposes such as landscaping. The box is then filled with organic material and switched with the lower box, which should contain "ready to cultivate"-compost material. The cultivation can then be restarted.

**Purpose of the Technology:** The purpose of the technology is to allow cultivation on sealed or contaminated soils. Through the use of the box towers as cultivation units the roots of the plants never get in touch with the soil. While the main rooting zone is to be found in the upper box, deeper rooting plants can grow down to 70 cm into the lower box without reaching the soil in place.

Another purpose of the technology is to create a mobile cultivation system. If needed, the boxes can be easily moved away even during the vegetation period.

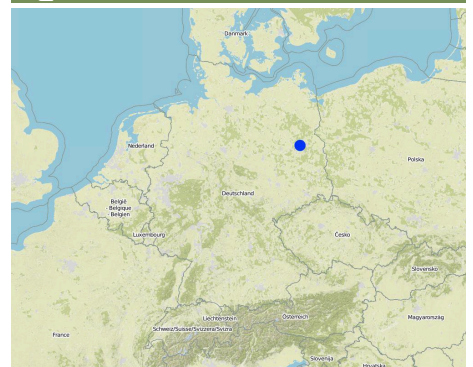
Last but not least, the technology has the purpose to create a space, where knowledge sharing on a practical basis regarding the topics e.g. agriculture, sustainability and health can take place.

**Establishment / maintenance activities and inputs:** For the establishment of the technology first and foremost a sufficient number (depending on the size of the gardening area) of "baker boxes" is needed.

Maintenance activities consist of refilling the lower box with organic material. This is also true for the required inputs.

**Natural / human environment:** The environment is strongly influenced by humans, as the first urban structures in this area already were established about 200 years ago. Regarding the topic soil this led to the conversion of the natural soils in place to Technosols.

地图



地点: Berlin, 德国

分析的技术场所数量:

选定地点的地理参考

- 13.41114, 52.50307

技术传播: 均匀地分布在一个区域 (0.006 km<sup>2</sup>)

在永久保护区? :

实施日期:

介绍类型

☐ 土地使 ☐ 创  
☐ 作为传 ☐ ≥50 年分  
☐ 在实 / ☐ 干  
☐ 外





Panorama picture of the garden (Assenmacher (CC BY-SA, 3.0 Lizenz))



Mobile cultivation beds (Assenmacher)

分

主要目的

- 减少、保护、恢复土地退化
- 保护其他土地免受下区域藏
- 保护/减少/多
- 低害
- 应气候变化天及其影响
- 减少气候变化及其影响
- 创土地影响
- 创土地影响

土地利用



供水

- 养
- 合
- 充分

土地退化相关的目的

- 土地退化
- 减少土地退化
- 修复/复严土地
- 应土地退化
- 不

解决的退化问题



SLM组

- Cultivation on sealed or contaminated soils

SLM措施



图

技术规范



## 物种多样性

中  
低

## 栖息地多样性

中  
低

## 土地使

### 市场定位

商业/市场  
商业/市场

### 非农收入

低于全  
入0-50%  
> 入50%

### 相对财富水平

常  
平均  
丰富  
常丰富

### 机械化水平

工作  
力引  
化动

## 定栖或游牧

定  
半  
人

## 个人或集体

个人/家庭  
团体/区  
合作  
员工 公司、府

## 性别

女人  
人

## 年龄

儿  
年人  
中年人  
年人

## 每户使用面积

< 0.5 公  
0.5-1 公  
1-2 公  
2-5公  
5-15公  
15-50公  
50-100公  
100-500公  
500-1,000公  
1,000-10,000公  
> 10,000公

## 规模

小  
中  
大

## 土地所有权

州  
公司  
区庄  
团体  
个人  
个人命名

## 土地使用权

入  
区  
个人

## 用水权

入  
区  
个人

## 进入服务和基础设施的通道

健康  
助  
就业 例如 农  
市场  
和交  
和卫  
务

好  
好  
好  
好  
好  
好  
好  
好  
好  
好

## 影响

### 社会经济影响

作 产

增加

SLM之前 : 0

SLM之后 : 100

产品多

增加

产区域 使 中 土地

增加

农业 入

增加

入 多

增加

### 社会文化影响

品安全  
健康 况  
化 会 如 、审 以及其他  
娱乐 会  
区  
国家  
会 弱势 体 况 别、年  
、地位、 多

减少  
削弱  
加强  
加强  
加强

Improved livelihoods and human well-being

decreased Increased

The "Prinzessinnengarten" is more than just a place to grow vegetables in the city. It is a space for diverse activities. Through the opportunity to contribute and to participate in open workshops, through the garden café and a variety of cultural events, the "Prinzessinnengarten" has become a lively meeting place far beyond the neighborhood.

地多



### 与技术建立成本相比的效益

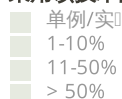
### 与技术维护成本相比的效益

## 气候变化

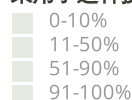
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## 和应

采用该技术的地区内土地使用者的百分比



在所有采用这种技术的人当中，有多少人在没有获得物质奖励的情况下采用了这种技术？



最近是否对该技术进行了修改以适应不断变化的条件？



### 什么样的变化条件？



和吸取

### 长处: 土地使用者的观点

- light and long-lasting production units
- a great part of the needed material has been recycled
- standardized format of the production units (fitting even to international cargo norms)

长处: 编制者或其他关键资源人员的观点

- mobile, flexible cultivation system
- allows cultivation on sealed or polluted soils
- open access technology
- knowledge sharing as key priority

弱点/缺点/风险: 土地使用者的观点如何克服

- limited productivity
- are highly dependent on irrigation, as the boxes dry-out fast (high evaporation/ surface area)
- Soil can be easily lost/washed out through the grid pattern (especially in the long term, when the erosion measures are reduced (decomposition of carton))
- The spacing in between the boxes serves as habitat for snails.
- The carton sometimes rots away in the course of the cultivation period. This leads to a loss of soil material out of the boxes.

弱点/缺点/风险: 编制者或其他关键资源人员的观点如何克服

- dependent on a high supply of "baker boxes"
- dependent on external inputs (especially organic material)
- allows only for hand labour

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实施日期: July 7, 2015

上次更新: April 2, 2019

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## WOCAT数据库中的完整描述

[https://qcat.wocat.net/zh/wocat/technologies/view/technologies\\_1678/](https://qcat.wocat.net/zh/wocat/technologies/view/technologies_1678/)

## 链接的SLM数据

不 0

## 文件编制者

0 0

- Humboldt Universität zu Berlin (HU Berlin) - 德国
- Nomadisch grün GmbH - 德国

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## 主要参考文献

- Urban Gardening. Über die Rückkehr der Gärten in die Stadt. Christa Müller, 2011.: ISBN 3-86581-244-9
- Prinzessinnengärten. Anders gärtnern in der Stadt. Marco Clausen, 2012: DuMont, ISBN 3-8321-9436-3

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