

INTEGRALNA
ZELENA
SLOVENIJA®



DRAVINJA VALLEY - EDUCATIONAL REGION FOR SUSTAINBLE DEVELOPMENT (FOR SLOVENIA AND WORLD)

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Learning region in Slovenia



WHY WE NEED LEARNING REGIONS ?

- knowledge for solving the current problems of the Earth (environmental, social, economics)
- knowledge for solving the natural disasters, problems with water, food, soil, climate



should be taken into consideration in relevant educational approaches



EDUCATION ON POLYGON IN NATURE



- direct experience in solving the current problems in place
- relationship between the visitors and local people
- understanding the meaning of the traditional knowledge
- formation of the intergenerational bounds



EDUCATION FOR SUSTAINABLE DEVELOPMENT

Establish learning regions in Slovenia

POLYGON

**NATURAL
PROPERTIES
OF
SLOVENIA**

- REGIONAL PROBLEMS
- NATURAL AND CULTURAL HERITAGE

CURRICULUM

DRAVINJA VALLEY

**BEST
PRACTICE**

Regional development should be based on internal sources – WHAT WE HAVE, THIS WILL BE USED.

COMPETENCIES THAT ARE WON THROUGH OUTDOOR LEARNING IN LEARNING REGIONS IN SLOVENIA

- acting responsible in the environment;
- efficient environment problems solutions;
- critical thinking development;
- the ability to analyze;
- the ability to interpret,
- ability to synthesize conclusions,
- transfer theory into practice,
- ability to independent and team work.



Outdoor learning



SELF-SUFFICIENCY ON 1,5 ha HECTAR



PERMACULTURE, ECOREMEDIATION, AGRO

PERMACULTURE

- Fenced area
- Berties fence
- Spiral bed
- Beds
- Card, textile beds
- Key bed
- High beds
- Whole year garden
- Straw beds
- Herb bed
- Asparagus
- Trees and bushes
- Terrace
- Soil profile
- Meadow orchard
- Chestnuts, walnuts, hazelnuts
- Birch
- Willow
- Wild herbs
- Insect hotel
- Cat home
- Compost
- Natural ecosystem
- Observatory
- Medieval weather station
- Sun power plant and heating water collector
- Water solar system
- Tents and cottages
- Shed and workshop
- Fountain
- Information board
- Learning boards
- Sand playground
- Children playground
- Tables and chairs
- Toilet
- Parking
- Info point

ERM SYSTEMS

- 1** Bioenbankment
- 2** Ecoremediation – theory
- 3** Phytoremediation plants
- 4** Indicator plants
- 5** Dynamic bioaccumulations
- 6** Rainfall garden
- 7** Monitoring of the storm water
- 8** Bio retention filter
- 9** Erosion solutions
- 10** Vegetation belt
- 11** ERM ditch
- 12** Bio filters
- 13** Various natural cleaning systems
- 14** Precipitation water collection
- 15** Green roof



The basic question is: of how to become self-sufficient



High bed garden on permaculture approach



YURT



Sun energy



Greenhouse inside



Hobbit house for saving energy



Hobbit house inside



LEARNING BY DOING APPROACH

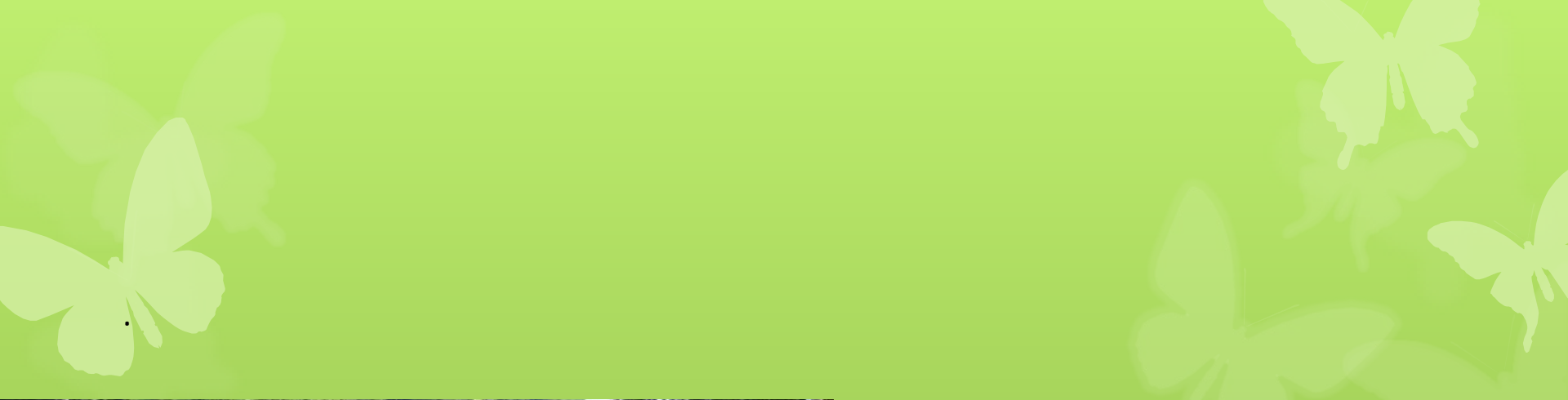


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KOMPOSTIŠČE



KINDERGARTEN

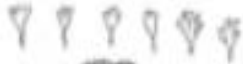




INVESTIGATION THE SOIL, WATER AND PLANTS

tadice

malé kvádkykat sjeno, slama, karton (u tom slučaju sboviti rupice za tadice)



zemiá



glna



granje za drenážu



plastická fólie (ili drveni okvir, smanjaje letno izušavanje), rupice za drenážu budu tako da voda ne curi po pouti



drveni okvir



drvena paleta





HOTELS FOR INSECTS

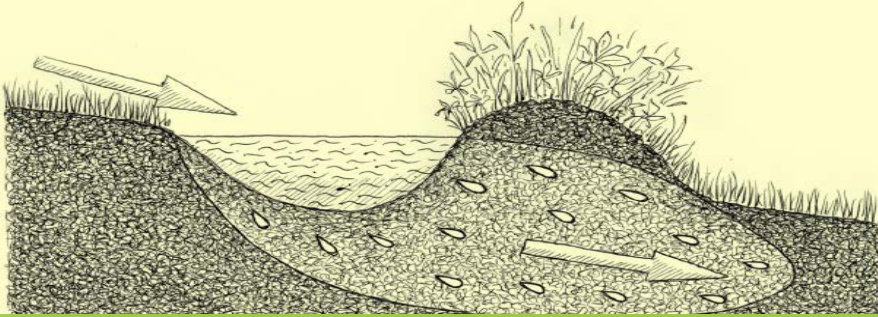


Travne mulde za zadrževanje vode

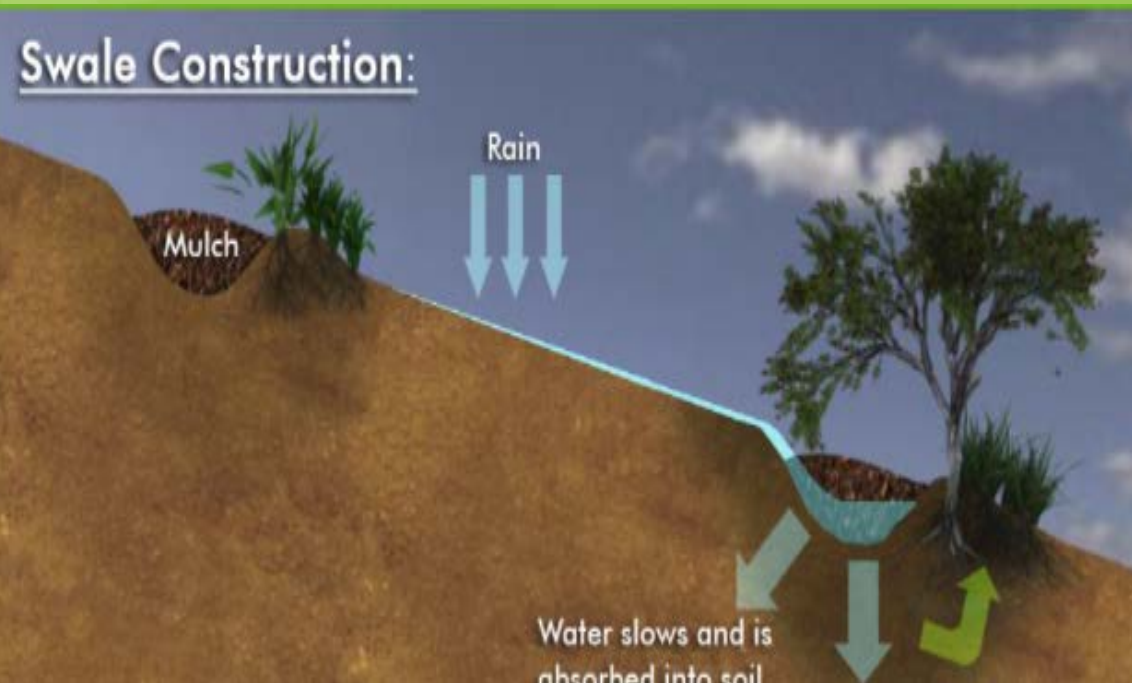
Grass through ditches

Na pobočju deževnica hitro odteče. Zato je potrebno izkopati jarke - travne mulde. V njih se zadrži padavinska voda in počasi odteka pod površjem po pobočju. Na tak način poteka naravno namakanje. Travne mulde ščitijo prst pred erozijo.

Rainfall quickly drains on slides. That is why we need ditches - grass through. They keep rainfall in it and slowly drain underground. That is how natural irrigation looks like. Grass through protect soil from erosion.



Swale Construction:



METHODS FOR CLIMATE CHANGES

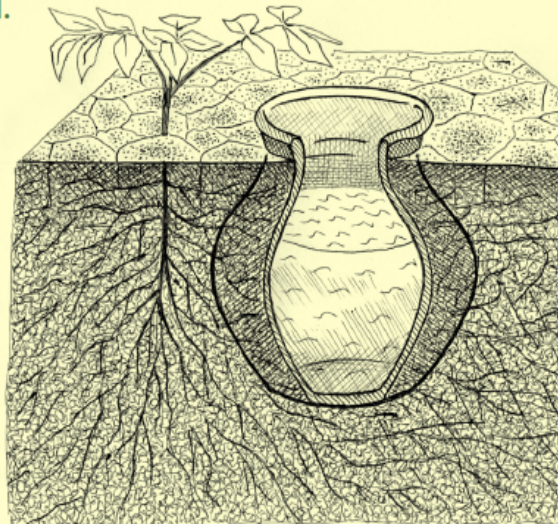
Glinene posode za zadrževanje vlage v prsti

Clay containers for soil water conservation



Rastline potrebujejo vodo za rast in razvoj. Pomembno je, da je voda na razpolago pri koreninah. Zato se uporabljajo glinene posode ali amfore, ki jih napolnimo z vodo in voda nato pronica iz sten posode glede na potrebe rastline. Tak način oskrbe rastlin z vodo je racionalen in prilagojen sušnim razmeram, saj voda površinsko ne izhlapi.

Plants need water for growing and development. It is important to have water on disposal by roots. Clay containers or amphoras are used for such purpose. They are filled with water and water seeps through the dish walls according to the plant needs. This way of water supply is rational and adapted to drought conditions, since the water does not evaporate.



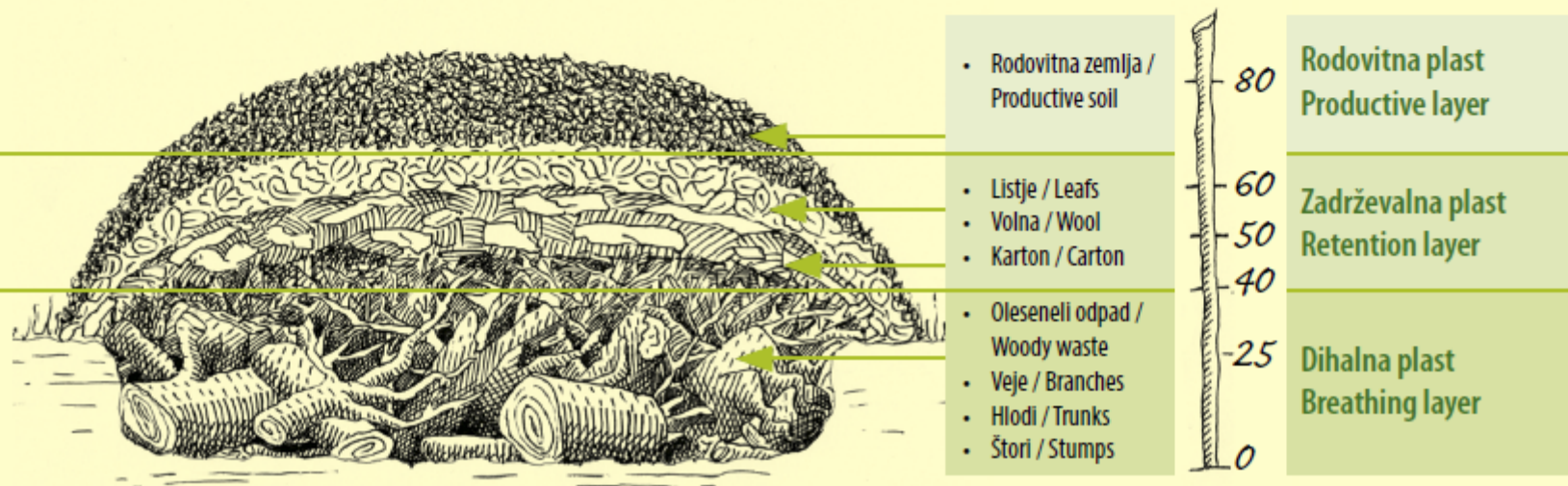
Gomilaste grede

Hugel beds



Gomilaste grede so vertikalni način pridelave tam, kjer je zemlja zbita, premokra ali presuha, izprana ali onesnažena.

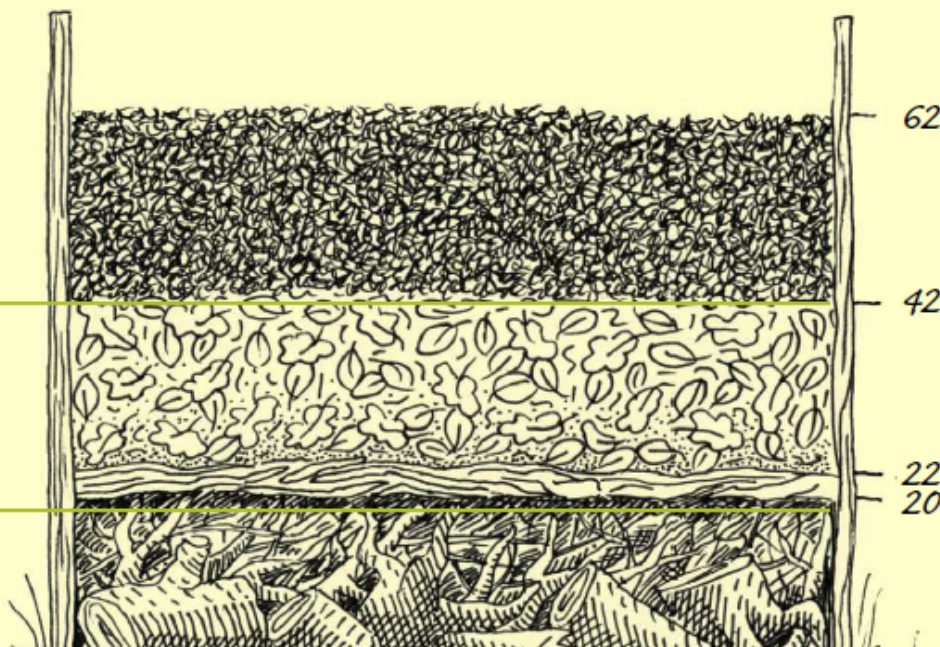
Hugel beds are vertical ways of production, where the soil is not appropriate (beaten, to wet, to dry, washed out, polluted)



Visoke grede | High beds

Višina gred ni predpisana, lahko je od 20 cm do 80 cm. Postavimo jih lahko kjerkoli. Leseni okvir naj bo iz hrasta, akacije ali kostanja. Za notranjo izolacijo grede uporabimo paropropustno folijo, filc, gradbeno folijo ali les

The height is not recommended it can be between 20 - 80 cm. They can be placed anywhere. Wooden frame should be made of oak wood, acacia or chestnut. For internal isolation of bed we use water vapour permeable foil, felt, building isolation foil or wood.



Rodovitna plast • Productive layer

- Rodovitna zemlja / Productive soil

Zadrževalna plast • Retention layer

- Listje / Leafs
- Volna / Wool
- Karton / Carton

Dihalna plast • Breathing layer

- Oleseneli odpad / Woody waste

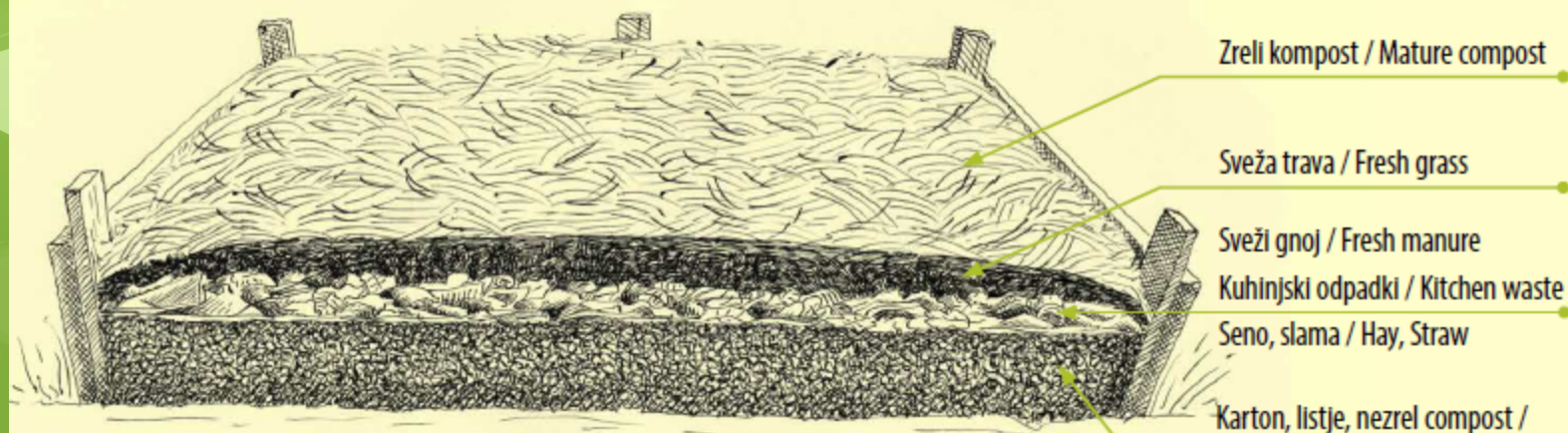
Greda pogača – vrt brez prekopavanja

Cake bed- garden without digging

Na poljubno površino položimo plasti za zastiranje brez predhodnega prekopavanja.

Plasti nalagamo do saditve oz. setve, zgornja plast je vedno kompost. Na taki gredici najbolj rastejo rastline, ki rabijo veliko vode (paradižnik, paprika, buče, jajčevci, kumare), seveda pa lahko gojimo tudi vse ostalo.

On any surface we lay layer for weeding without previous digging. Layers are added until we seed or plant, upper layer is always compost. On such bed we usually grow plants that need a lot of water (tomato, pepper, pumpkins, eggplants, and cucumbers), of course other plants can be grown as well.

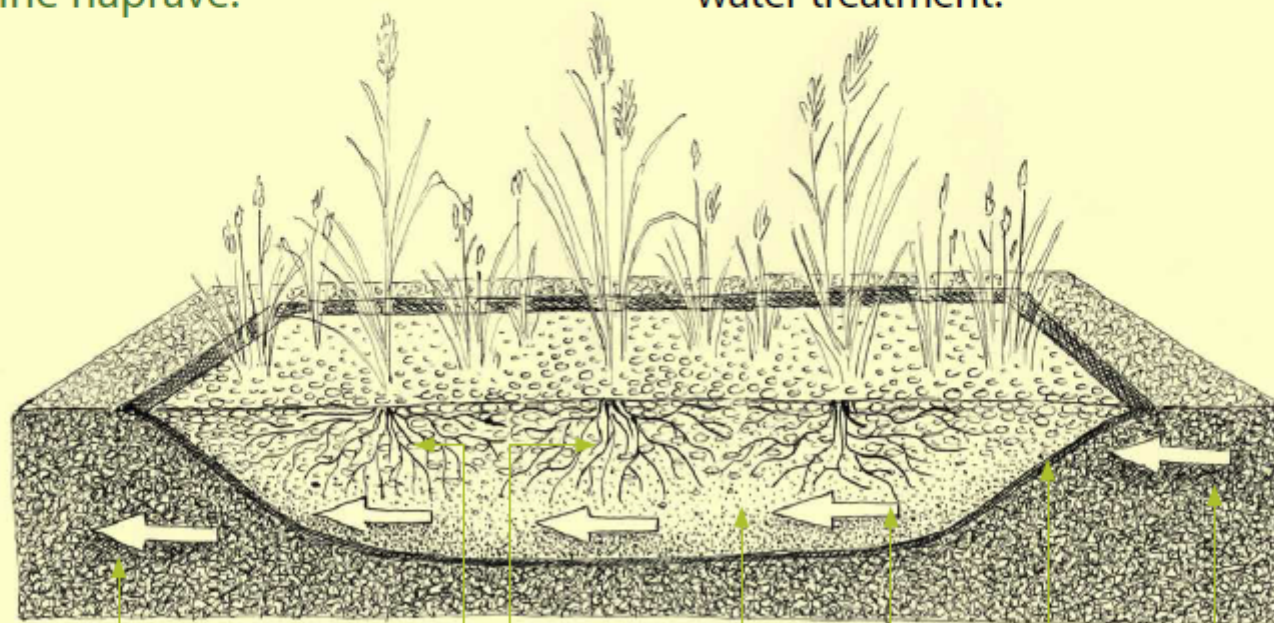


Peščeni filtri | Sand filters

Voda v pokrajini se čisti sama tako, da teče skozi prodnike in pesek. V njih se zadržijo trdni delci (voda se filtrira). Ko pa teče voda skozi drobni pesek in mivko, poteka fizikalno-kemijsko čiščenje.

Ta postopek posnemajo rastlinske čistilne naprave.

Water in the environment it cleans by itself, by flowing through gravel and sand. They keep the solids and so the water is cleaned (filters). When water flows through sand it gets cleaned physically and chemically. This procedure is repeated by the plant wastewater treatment.

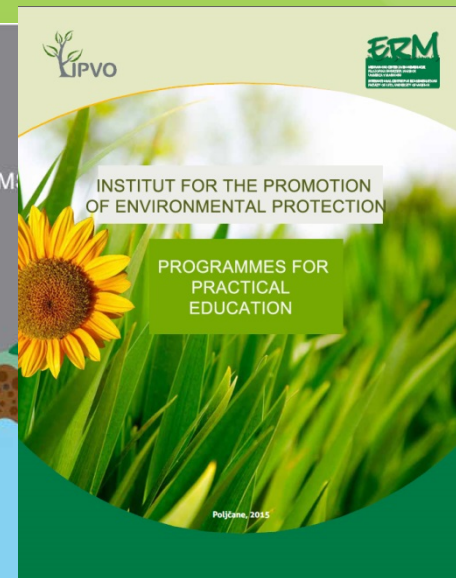
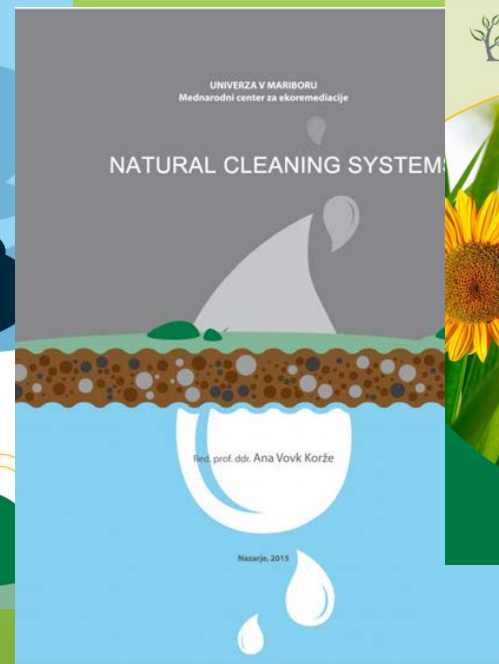
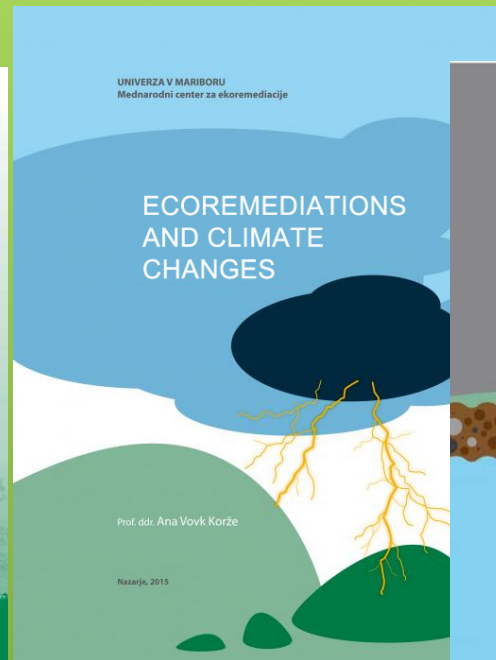
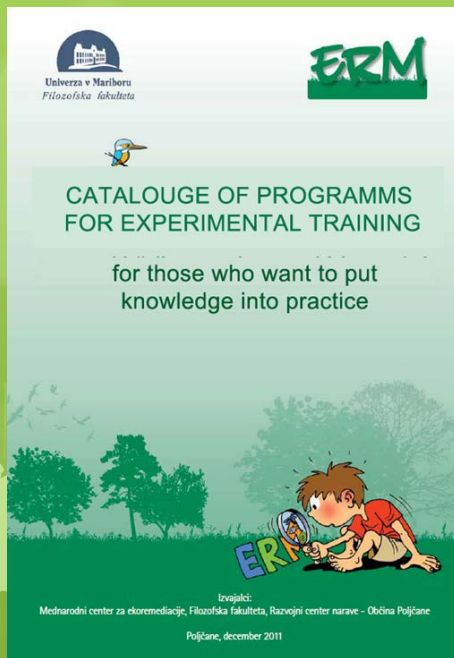


Dotok prečiščene vode
Clean water exflow

Mešanica peskov
Mixture of sands

Folija
Foil

Books and handbooks



PROJECT: E-MATERIALS FOR ENVIRONMENTAL STUDY for the subject environmental studies

- prepared for analyses
- critical thinking
- development's consequences

CONTENT OF THE PROJECT:

- E – book Going to pound
- E learning paths
- E-materials for health and environment

Web address: <http://distance.pfmb.uni-mb.si/course/view.php?id=61>



Themes of the project :

- Learning from the work of the nature
- Taking care for natural resources, conservation of biodiversity
- Human impact and consequences
- Satisfaction of individual needs and impact on environment
- Identifying problems, justify decisions and planning actions
- Making decisions regarding a conflict of interests between human society and nature



**EDUCATION IS FIRST STEP IN DIRECTION
OF SUSTAINABLE DEVELOPMENT –
SLOVENIA MAY BE AS LEARNING REGION**

PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL



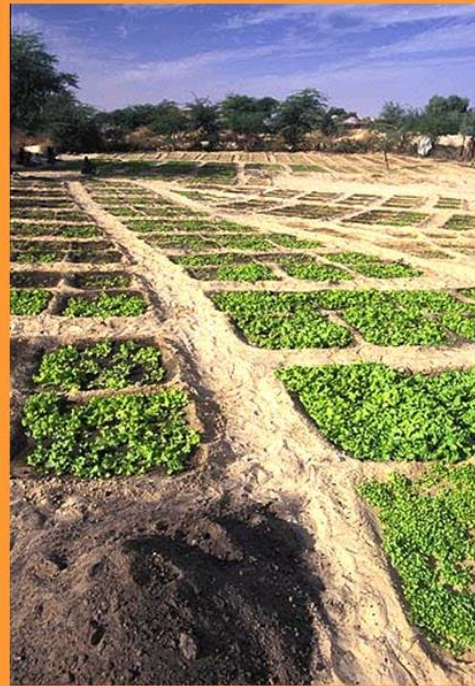
PROJEKT – RAZVOJNA POMOČ SLOVENIJA - SENEGAL

Izhodiščno stanje:

Želeno stanje:

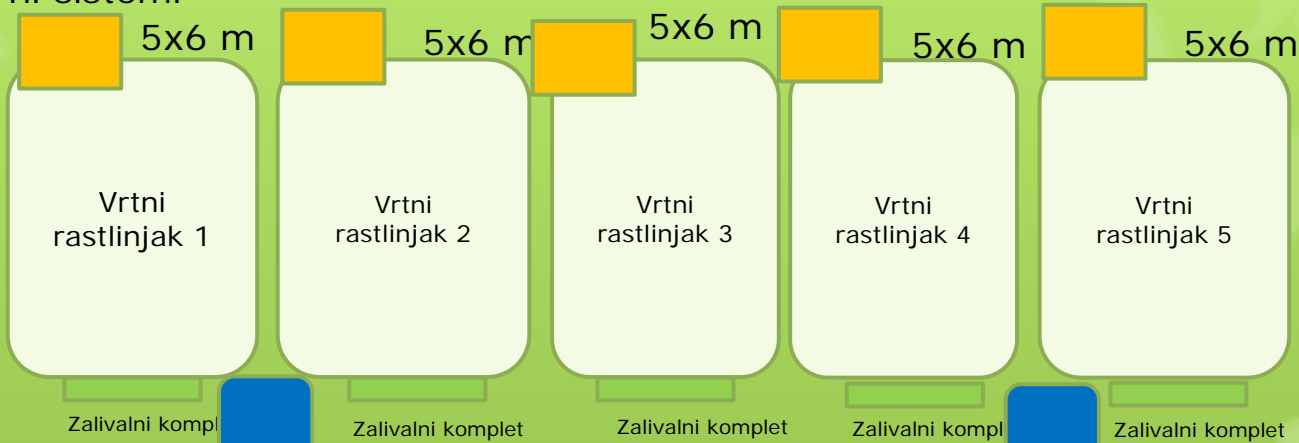


SAMOOSKRIBNO POLJEDELSTVO je poljedelstvo za domačo oskrbo.

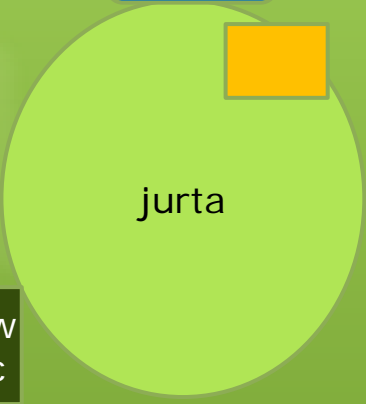


Solarni sistemi

500 m



Zbirni
ključ
vode



WC



Key hole

Gomilaste grede



Visoke grede

WC

Pogoždovani
Z drevesi
moringa
1.500
dreves



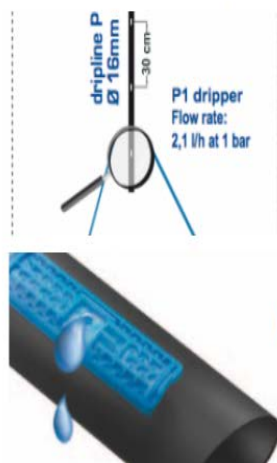
PROJEKT

POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

Vrtni rastlinjaki z namakalnimi sistemi



Namakalni sistemi so na zalogi!



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

Zbiralniki vode ob objektih za zalivanje

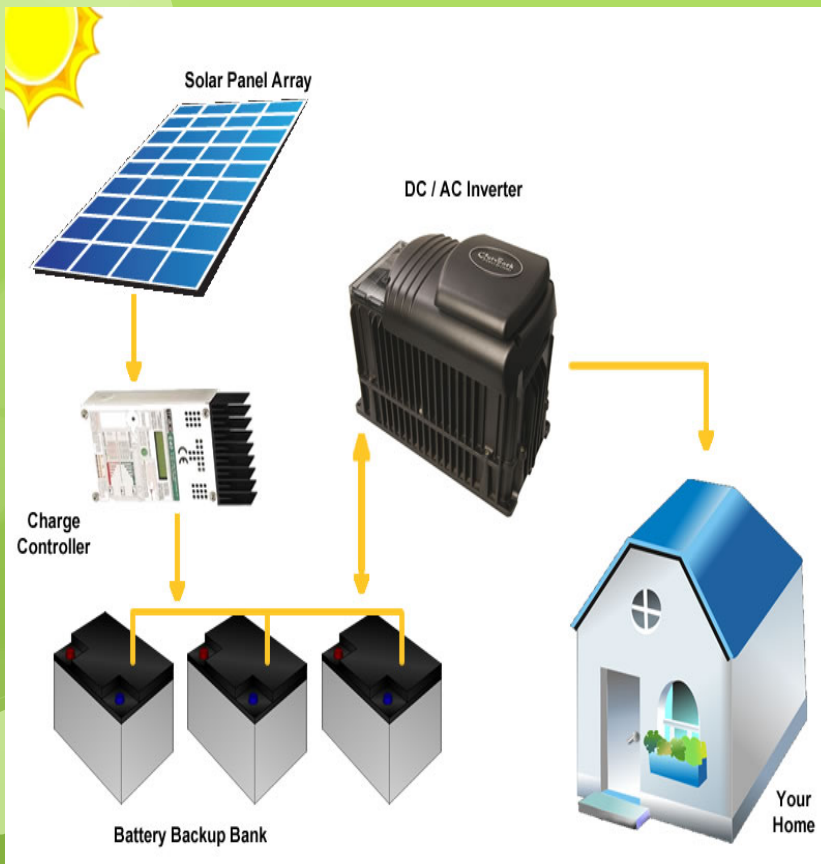


PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

SKLADIŠČNI PROSTORI ZA SHRANJEVANJE PRIDELKOV



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL



SOLARNI SISTEMI ZA OHLANJANJE
SKLADIŠČA TER ZA OSKRBO RASTLINJAKO
IN JURTE

PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL



TREEBOG – KOMPOSTNI
WC

PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

VODNE AKUMULACIJE ZA DEŽEVNICO



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

JURTA – MONGOLSKA HIŠA



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

GOMILASTE GREDE IN VISOKE GREDE



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL

KEY HOLE
GREDE



Uporaba zastirke za zmanjšanje izhlapevanja vode iz zemlje



PROJEKT POLIGON ZA SAMOOSKRBO V OBČINI GANDIAYE, SENEGAL



ZELENI ZIDOVI V SENEGALU

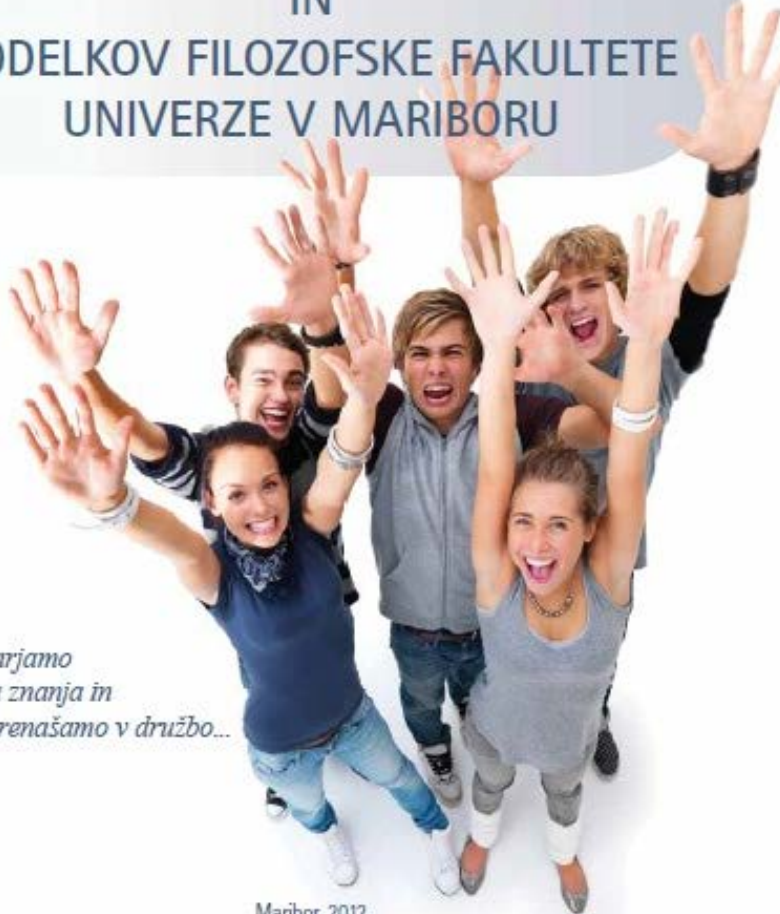


moringa

Develop programmes for experimental learning



KATALOG PONUDBE CENTROV IN ODDELKOV FILOZOFSE FAKULTETE UNIVERZE V MARIBORU



*...ustvarjamo
nova znanja in
jih prenašamo v družbo...*

Maribor, 2012

Help teacher to implement natural science days, project days, field work, practical lessons for all types of schools

Thank you!