



Ecobond



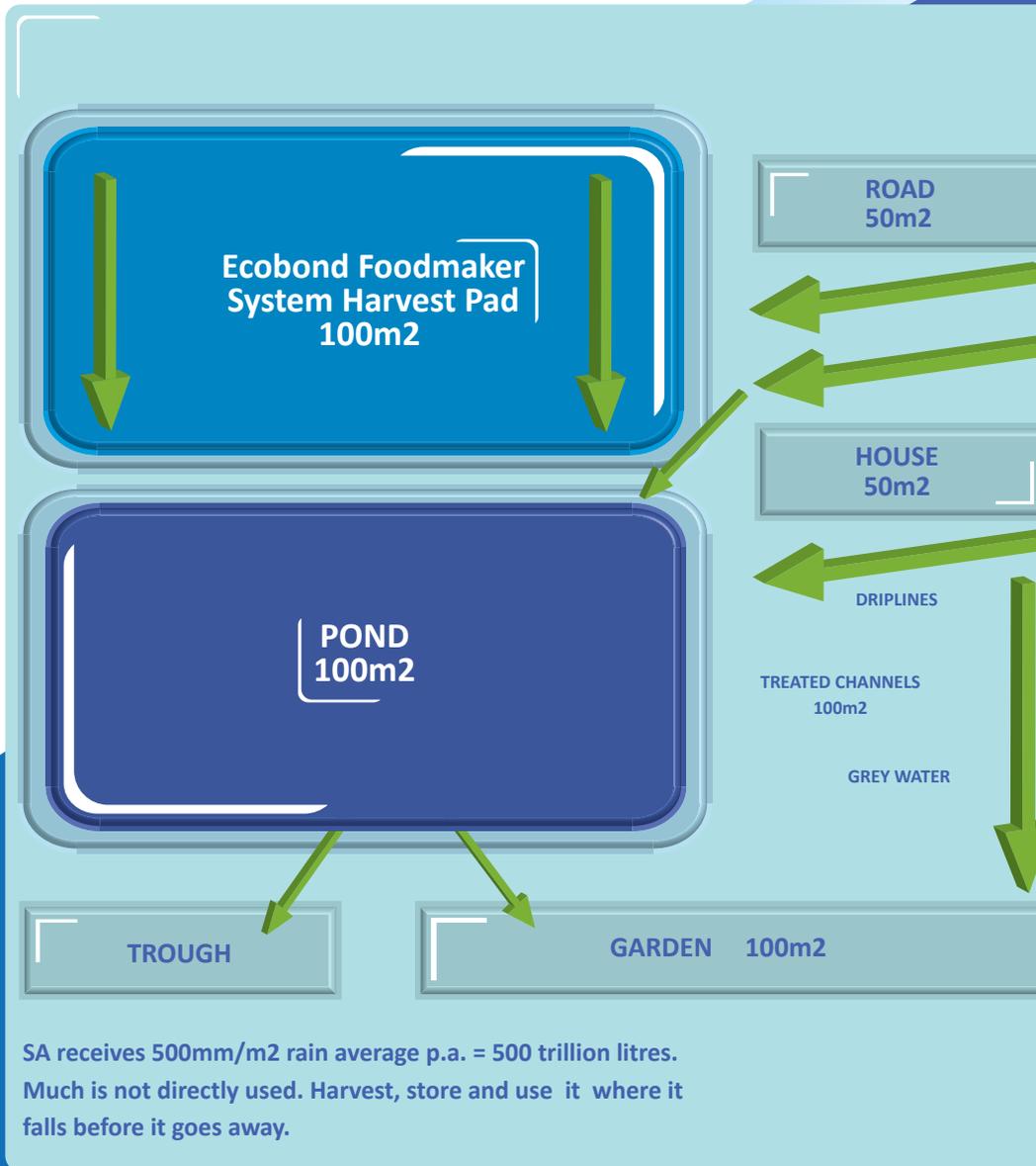
Ecobond harvests, stores and conveys water.

- Ecobond makes soil strong and water resistant.
- It can be mixed into or sprayed onto soil.
- Ecobond water harvesting catches the rain and stores it where it falls..
- higher up where the rural people are...
- Then gravity feeds it to where needed, when needed.

Convert rain into food and income



Yesterday's rain has gone into the soil and far away. Rather catch the rain, store and use it where it falls.



SA receives 500mm/m² rain average p.a. = 500 trillion litres.
Much is not directly used. Harvest, store and use it where it falls before it goes away.

Implementation:

You cannot carry enough water (if you can find it) up the hill in buckets to farm. Pumping is difficult and large dams are too far away.

Ecobond Foodmaker system catches and stores the water higher up, where the people live and farm. It is eco-friendly as it only borrows the water from nature for a while before returning it to groundwater, rivers or the sky. It is cheap as one medium unit storing 80 000L costs R15000 (US\$1200) = R7500 (\$600) per family of six. If they sell 25 eggs @R1 (US 8c) each per day the investment is paid back in 10 months. Add meat, milk, vegetables, fruit, flowers and handicraft and it is repaid soon and quite profitable.

This justifies profitable private sector sales to people who can pay.

Many rural people cannot pay and government donors want to fund and help them. They could jump start by funding large projects. A PPP franchise company could in SA over some time train 200 teams of 4 persons with 2 LDVs and trailers each. They collect from main centres and deliver chemicals, water and training for two units per week to site. Small farmers arrange five local labourers to construct a unit in 5 working days.

Government departments similarly train and construct 20 000 units p.a., as does the private sector and exports, a total of 80000 units p.a. After five years 2.4 million people benefit directly and many more indirectly.

Tests sponsored by WRC

Rural people can create their own jobs, food and income!

Leverage the many forces of Nature like plant food in topsoil, rain, gravity, air, new seeds, baby cows and chicks, food for them, sun, wind, (communication, phones, IT, banking) with labour to make food and prosper. Without water they all die or go away.



Less than 5% of softer rain reaches rivers, the rest seeps into the soil. Ecobond treated soil harvests all the rain 100%. Then gravity feeds it to the Ecobond lined storage pond. Ecobond treated channels then gravity feed it to where needed, when needed.

Rain (SA average almost half a metre /m2 p.a.) falls on all five the Ecobond Foodmaker System unit components of say 100m2 each. 500mm rain/ 500m2 = 250 000 L p.a. A family of 6 needs 109 500 L p.a. Shade cloth reduces evaporation and two families (12 persons) can have safe consistent water and farm.

They can then leverage the forces of Nature and create their own jobs, food and income. A girl who would have carried water now studies, lands a top job and pays 1 unit per month average (R15000) taxes for 40 years (= 480 units.) 5760 small farmer members create their own jobs, food and income and many more benefit indirectly. Government and Donors earn an excellent return.

Mechanization and IT have become so effective many will never find a job. People going to cities often find no job but hunger, drugs, crime and violence. A happy life with income, food, family and friends in rural areas may slow or reverse migration and urbanization.



- Ecobond can contain water.
- Irrigation dams store water effectively at low cost.
- Ecobond chemically reacts with and makes a wide range of soils water resistant.
- Reacted Ecobond resins are very inert and will eventually biodegrade.
- Ecobond has many ecological benefits, too long to list here.

Sewage and effluent treatment ponds:

- SA Government must protect groundwater (new 2014 law) but costs are prohibitive.
- Sewage seeps into underground water and often spills into rivers.
- Ecobond can reduce such damage significantly at a fraction of conventional costs.
- Ecobond innovations can similarly be used in containment technology at low cost for evaporation ponds and surface shields (e.g. to prevent sinkholes in dolomite.)

Ecobond reinforced soil linings can be used in water storage dams, sewage/oxidation/ evaporation ponds, wetlands, greywater purification or for mud, erosion, vegetation control. Effective farming with very little water can be done in arid areas with Ecobond seepage and evaporation shield membranes, etc. Low cost shade cloth reduces evaporation rates from Ecobond ponds by up to 4 times while triple linings can reduce seepage to negligible levels.

Ecobond innovations can also be used together with conventional products e.g. on and or below plastic linings in refuse dumps to protect groundwater.



- Ecobond can reduce erosion e.g. Kinshasa ravines.
- Ecobond flood control in wetlands, water storage in dry river beds, vegetation control and many other innovations can improve conditions.
- Low speed canals, channels and furrows with on-site materials effectively and cheaply convey water to where needed and can create jobs for locals.

The cost of such applications are often less than half of conventional costs. The last sewage project quotation was 27% of conventional costs.

Ecobond has many other uses...



60 000 vehicles per day use this Ecobond base road in Johannesburg. Ecobond is certified by Agreement SA (at CSIR), member of WFTAO (like world SABS certifying good new products.)



Township bus route... low cost and durable... 14 years with no maintenance and still in excellent condition... an ideal solution for Africa's road problems.

SA has 600 000km of gravel roads being eroded daily with nothing to protect them. Low dosage Ecobond DuraGrav can more than double its life, protect the environment and save maintenance costs. It is cheaper to re-gravel once every 6 years than 2 or 3 times while having a superior driving surface.

Ecobond is a material supplier. Engineers design projects, contractors construct them and clients, government or donors fund them.

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