



## Growing Food at Ultra-Low Cost Without Land

Producing vegetables & fruit in rows of vertically hung bags provides food & income for individuals and small cooperatives. In arid climates it uses very much less water than land based crops and can be squeezed into the tiniest of spaces.

Four years ago a friend of mine David Acton had a modest ambition – to feed the world!! Additionally he wanted to provide employment and income for unskilled people in a carbon friendly way. David is a great “ideas man” with a number of patents to his name and when this is combined with his humanitarian approach to helping communities, he makes a great ambassador for positive change in our world. His simple idea to achieve this is now enabling some of the poorest and most disadvantaged people on earth to grow vegetables and fruit organically, using local materials, at minimal cost, while consuming tiny amounts of water and, most importantly, when they have no access to land.



Patient recovering from Spinal injuries at the CRP Hospital in Dhaka, Bangladesh.

Photo: Accessible Edibles

David’s simple concept is to grow crops within a vertically hung bag. In Britain the obvious candidate is the Supermarket carrier bag often found blowing around our streets and polluting the environment. In projects set up in Kenya and Bangladesh David found that locally available items such as material cement bags, gunny sacks or cloth bags manufactured using material off cuts from clothing manufacturers, work well.

Compost and a seed placed in a bag will start the process. Compost may be bought or preferably made using recycled local materials. In developing countries free seeds may be available from a local aid project. Using donated seed, home-made compost, discarded plastic bags and perhaps a washing line, means the set-up cost can be close to zero, making it accessible to almost everyone regardless of income.

The bags can be hung from any available location such as a fence or wall, low hanging roof timbers, a tree branch or trunk, a washing line or using a frame made from re-cycled timber or bamboo poles standing on a hard surface or contaminated land. Imagination and locally available materials have been found to provide simple low cost solutions.

Multiple rows of bags will greatly increase the yield from the same small area. For disabled Urban Farmers or children, the bags can be fixed at a height to suit the individual and above the reach of grazing animals such as goats, chickens or rabbits. A further advantage is that the bags are not easily reached by ground pests such as slugs.

Additionally in developing countries an UrbanFarm can produce large annual yields as the climate often provides a very long growing season.

Examples of crops that grow well are all the bean and pea families, sweet peppers, chili peppers, courgettes, leeks, Pak-Choi, broccoli, kale, Swiss chard, cucumber, strawberries, tomatoes and herbs.

In developing countries, and particularly where growing areas or resources are limited, high value crops such as chili peppers or strawberries have been grown and the proceeds used to buy staple foods such as maize or rice for the Urban Farmer. So how was this achieved and what problems were encountered along the way?

The initial idea focussed on arid climates and was for a custom made bag within a bag. However after trials it was found to be too expensive and would cause an unnecessary restriction for the people that most needed it. This lesson re-confirmed that whatever the final design turned out to be it MUST be either ultra cheap or free and the materials MUST be available to the poorest people living in developing countries.



David Acton in Kenya. Photo Accessible Edibles

Establishing an overseas project where the system could be proved was our next priority. It needed to be in an arid climate to test the water conservation aspects and, following advice from a very knowledgeable contact, it was decided that Meru in Kenya was the place.

UrbanFarm is still used there and last season was found to be a life saver for the community. During a recent drought, when 90% of the land based crops were wiped out, vegetables and fruit from the UrbanFarm bags that required only tiny amounts of water managed to survive and sustain the community.

Our second test area was Bangladesh chosen because it was a totally different environment to Kenya and also I had experience of the country from my time there as a VSO volunteer. Additionally I had remained in contact with a number of people at different projects. A further contact with a University in the capital Dhaka came from a local GP and their Agriculture department carried out successful trials before we arrived. This was a huge advantage.

If we had to site the greatest resource we have had throughout the development of this project it would most certainly be our contacts in developing countries that we either already had or managed to develop.



Bangladesh. Photo: Accessible Edibles.

In terms of difficulties we could have probably made faster progress if there had been more than just two of us working part time and self-financing the project. That said growing seasons tend to naturally introduce longer time scales and, while slow progress is frustrating at times, it certainly allows more measured thinking and analysis of what is happening, leading to clearer and more accurate judgements for the future development of the project.

# stories of change

Our self-belief in the viability of the project has been paramount particularly in the early days when we had not made an overseas visit. Describing the potential for UrbanFarm in developing countries to well fed Brits with a bit of money in their pockets was at times dispiriting as many people just didn't get it. Doing the same exercise to those with experience of, or living in, developing countries was inspirational. Faces lit up, smiles appeared and people became very enthusiastic when they realised the enormous potential for helping some of the poorest people on the planet.

The final problem area remains to be spreading the word to those that can most benefit from it. Establishing a website [www.accessible-edibles.org](http://www.accessible-edibles.org) containing all the information needed for anyone to start their own DIY UrbanFarm was a huge step forward. As we want to reach individual families on the ground in developing countries clearly they are unlikely to have access to our website so we had to find an alternative strategy. We decided to join the World Association for Non-Governmental Organisations (WANGO) as they have a considerable number of development organisations who are involved in various areas of work. We have been contacting NGOs listed on the WANGO website under the category of Agriculture and Food, sending brief project details and inviting them to visit our website for more information.

We discovered two problems with this approach. Firstly we have no idea if a speculative email to any organisation will reach the person who is most likely to benefit from it, however judging by the number of replies certainly some did make it through. The second difficulty is that as all the information needed to start a project is on our website, we will never know how many schemes are actually up and running. We only know about the ones that chose to reply. That may not matter too much but it would be good to know the success rate as if in the future we want to try to source funds for expansion, such information may be important.

In terms of expansion we have a good working relationship with Rotary International who has clubs in virtually every country on earth. We are also looking to source some money for start-up funds that might be directed particularly towards small cooperatives. Where money is concerned a very small amount to buy seed and compost goes a long way and we are thinking that these funds could be sent to and managed by Rotary clubs overseas that are local to the potential project.



This development in Rochdale UK produces and supplies fresh vegetables to the Rochdale Food Bank.

Once projects are established they soon become self-funding as, when a family has grown enough food for themselves, additional money may be raised by growing crops to sell. If you are looking for some help with your project contacting your local Rotary, Lions or Round Table clubs may be worth considering as their overseas contacts can be invaluable.

### Further Reading

Urban Farm Application Manual <http://www.accessible-edibles.org/GROWBAG%20MANUAL.pdf> [Site Survey/Project Funding](#)

# stories of change

*Urban Farm* was written by Mike Tomkinson of Accessible Edibles, June 2014.

Mike Tomkinson

Accessible Edibles

Email: [contactus@accessible-edibles.org](mailto:contactus@accessible-edibles.org)

Website: [www.accessible-edibles.org](http://www.accessible-edibles.org)

Practical Action is a development charity with a difference. We know the simplest ideas can have the most profound, life-changing effect on poor people across the world. We have been working closely with some of the world's poorest people - using simple technology to fight poverty and transform lives for the better. Practical Action works in Africa, South Asia and Latin America.

While the greatest care has been taken to avoid the information contained in this document, neither the publisher nor the author can be held responsible for any damages resulting from the application of methods explained in this document. Practical Action reserves the right to modify, at any time, the information and specifications contained within this brief.

# stories of change