FACING CLIMATE CHANGE

UNITED WE STAND, DIVIDED WE DIE

Part II: Solutions and Strategies

BUSINESS GROW

Urban farming
& sustainability

Sustainable solutions

Let's focus on the two most important ingredients for life: **water and food.** A critical factor behind the existence of every past civilization has been a stable and reliable climate – when farmers knew when the seasons would change and the rains would come.

That is all changing. Quickly.

At a global level, the most important goal for us is to **stabilize climate by slowing the rise in average global temperatures**, since without a stable planetary eco-system and reliable weather patterns, food production, vital water sources, and our livelihoods will be seriously affected.

"Buying 'green' isn't enough. We have to buy less and re-use, share, and give away what we have and don't need."

At a local and individual level, the most important goals will be to:

1. **Downsize and get off the grid as much as possible to reduce stress on critical, life-giving resources.**
2. Learn how to adapt and cope with extreme weather events and weather-afflicted resources. This means not just knowing how to grow food and collect water where we live and in our communities, but having the ability and equipment to do so. Other measures involve using solar panels, recycling food and water, and reusing as much as possible.
3. Ensure there is arable land available that contains healthy soil.

To reduce stress on critical, life-giving resources and create more sustainable communities and cities, **we will need to do less buying and more sharing and recycling.**

How to get what you want without paying for it explains key ways that we can do this, and Making Every City Sustainable presents a vision and additional ideas for how to create more sustainable families, communities and cities.

Downsizing our purchasing and environmental footprints is absolutely essential for one simple reason: as the expanding global population faces the limitations imposed by finite resources, **a resource crunch is inevitable.** **'Buying green' isn't enough. We have to buy less and re-use, share, and give away what we have and don't need.**

Downsizing is also essential for the health of ourselves and our planet since no matter how beautiful, impressive, pleasurable or sweet the items we have, use and treasure are, they will all eventually sink, spill, seep, leach, erode, or break down into the earth and oceans and ultimately pollute the air we breathe and water we drink. [Great Pacific Garbage Patch.]

For urbanites, an all-important foundation stone of self-sufficiency will be **urban farming** – growing food in urban areas. Where can we grow food in cities? Cities have ample space to grow food: car parks, kerbs, sunlit walls, vacant properties, parks, window sills, fences, gates, balcony railings, verandahs, power poles, swimming pools, and particularly rooftops, which – providing they are sturdy enough – can be converted into vibrant gardens in the sky. [How to set up a rooftop garden.] In fact, on and along one sunlit wall, it is possible to grow thousands of delicious tomatoes, hundreds of lettuces and cucumbers, and large amounts of other healthy, great-tasting vegetables and herbs that could feed hundreds of people.
[Contact Business Grow for details.]

Mobile Farms are another urban farming solution that can produce tons of food sustainably on rooftops, office blocks, vacant land, hospitals, boats, beaches, mountains, and in schools, car parks, fields, camp sites, refugee camps, and other areas.

Mobile Farms can quickly boost food production capacity in virtually any sunlit area, are relatively low cost, easy to build, compact, mobile and scalable. [Contact Business Grow for details.]

Why our food is poisoning us

If we don't have ready access to land, why not simply ask? Ask a neighbor to help them grow food on their unused garden beds and split the harvest. We could also ask local government politicians to set aside or lend unused land to build community gardens on. [How we can eat our landscapes: How plots of unused land can be turned into communal vegetable gardens,.]

GENERAL TIPS FOR GROWING FOOD:
Plants are generally happier and grow larger in the ground than in pots and planter boxes, although many large plants such as tomatoes, cucumbers, fruit and other trees will grow very well in large pots. If no ground or garden is available to grow food in, the next best option is to build **raised gardens** – an easy, cost-effective and very productive way to start growing large amounts of vegetables in a short span of time.

Shade nets will likely be useful during summer months in hotter climates to prevent plants from wilting, **composting** can be used to turn organic garden and kitchen waste into plant food as well as to revitalize old soil, and committing to a **no-(chemical) spray rule** will help ensure intake of chemicals into ourselves and the environment is minimized.

Water – drip, drop, drip…..drop?

Water, the most precious of resources, can be both conserved and captured.

The average American uses up to 400 gallons of water every day according to the Environmental Protection Agency. By **recycling** just a potion of the water we use, we can quickly begin to reduce our water usage and set in stone easy sustainability habits that can last for generations.

Conserving water not only reduces utility bills but also helps preserve and extend the life spans of existing water resources. ['Shocking' underground water loss in US drought.] It will also help take the hard edges off the vicious cycle of rising temperatures making us to want to drink and use more water, a need that may hit the wall as hotter temperatures speed up evaporation and trigger droughts.

How about **capturing water**? Millions of liters of usable water simply flow down drains when it rains (and then we stress out when water restrictions are introduced.) The wasted potential involved in this one phenomenon alone is staggering. Capturing even a fraction of this water will make a difference. We can do that easily at home by suspending a large plastic sheet over a water tank or installing a downpipe rainwater collector [How to install a downpipe rainwater collector.]

FOOD PRODUCTION 101: The importance of growing your own food

Artificial chemical fertilizers such as the toxic weed killer **RoundUp** [Monsanto's Roundup Ready Herbicide is More Toxic than DDT] are commonly used in commercial farming to replace nutrients and key trace elements that would otherwise be replenished naturally if natural farming methods (ie: crop rotation and fallow years) were used.
These toxic chemicals permeate into the soil and are subsequently absorbed into anything grown in that soil. Chemicals are also routinely used in pest control, food storage and transportation, so when commercially produced food reaches our plates, it will most likely contain a toxic cocktail of harmful chemicals.
Note: these are poisons, and are one of the reasons why toxins are found in breast milk.[Insecticides put world food supplies at risk, say scientists.]

Growing our own food gives us near total control over what goes into – and stays out of – our food.
Urban farming gives us far greater control over our health, cuts costs, can trim food miles to food meters, produces real, great-tasting food, and gives us the assurance that we are not poisoning our children by feeding them commercially-grown fruit and vegetables. [Urban Farming Guide]

"At the end of the day, the basis of all decision-making with regards to future survival strategies should be based on one simple concept: No water, no life."

By purchasing water tanks or rain butts, people could potentially store thousands of liters of water on-site as 'water insurance' in case of drought, natural disasters, or simply to water the garden. **Communities, cities and states could build large shared-use water tanks for the same purpose.** If water purity is an issue, water filters, including filter water bottles, can be used.

In the political arena, this article, Facing Historic Drought, California Lawmakers Vote To Place $7.5 Billion Water Plan On The Ballot, shows how opposing political parties are coming together to tackle critical water shortages.

How can we utilize recycling to encourage local food production, water collection and storage, and simultaneously reduce rubbish flows into landfills and bodies of water? Could local governments incentivize plastic recycling companies to recycle mainstream-use plastic products such as PET bottles and milk containers into flowerpots, planter boxes and water tanks?
Could local or central government-run advertising campaigns be used to encourage citizens nationwide to request these items to grow food and capture and store water in?
If these items were distributed either free of charge or offered at subsidized prices, it would be a substantial win for the environment: rubbish inflows would be slashed while the self-sufficiency of communities would increase. [See Making Every City Sustainable for more information.]

Another way to do more with less is to reduce wastage and widen and improve distribution of food and water. The quantity of food and water we have available is overall less of an issue than how both are distributed – and wasted. In America in 2010, 133 billion pounds of food was lost – that's 31 percent of the total food supply worth approximately $161.6 billion.
It's a similar story with water: leaking water pipes in many cities result in millions of liters of water simply draining into the ground. If physical distribution systems and networks were improved, much of this wastage could be reduced.

In terms of collecting water and growing food, it needs to be emphasized again: it is one thing to know how to be self-sufficient, it is another thing altogether to have the equipment to do it, since at a personal level the combination of both will likely be the best insurance any of us could have.
[Contact Business Grow for details.]
[Urban Self-Sufficiency Premier Package.]

At the end of the day, the basis of all decision-making with regards to future survival strategies should be based on one simple concept: No water, no life.

The importance of community

Besides acquiring the know-how and equipment to grow food and capture and store water, another key factor in creating a more sustainable future will be building community, working together, and developing relationships.
In fact, in a world facing the double dilemma of a growing population and shrinking resources, the old adage "United we stand, divided we fall" is going to be more relevant than ever.

Should food and water supplies continue to shrink, people will be faced with some stark choices:

1. Pull up the drawbridge and fend for themselves and their families and subsequently engage in hoarding, panic buying and possibly violent behavior, or
2. Cooperate and form collectives, co-ops and community groups to pool funds, skills, resources and tools, ie: harness capabilities and strength in numbers.

In the latter, individuals, families and communities will have to work together and share time, funds, skills and resources in order to mitigate and cope with the effects of climate change.
In the former, it's everyone for themselves; the survival of the fittest, strongest – and better armed.

Cooperation will be vital in a resource-limited world, and to get it, it may well become necessary for individuals and groups to **share resources**.

"It appears the key to significantly reducing greenhouse gases is to find an abundant, nonpolluting alternative to fossil fuels – ideally one that can be seamlessly introduced and utilized by existing technologies."

Doing so will help engender trust, strengthen relationships that may well be critical in times of emergency and distress, and enable sharing of ideas, some of which may save lives. It will also require trust. As such, it will be important to become known as a contributor rather than a taker, a producer rather than (solely a) consumer.

If we are not doing so already, we should start giving, sharing, and giving some more, then if we ever need to call in a favor or request access to a resource, we will be much more likely to hear a "yes" if we have been contributing and giving all along.

Some benefits of the 'sharing economy': Airbnb, Uber proving a hit as Australians turn to 'sharing economy' to make extra money

Buy or barter?

Another smart method to reduce waste and protect the environment is **bartering**. As opposed to the resource-sharing mentioned above, this age-old practice has been modernized to assist both individuals and businesses to exchange new or used products and services in a way that is either cheaper than standard retail or free, and that helps keep products out of landfills for longer.

Bartering has some key advantages –

1. Convert excess or unwanted goods into another's resource.
2. Help people and businesses acquire and dispose of items and equipment in a more environmentally-friendly way.
3. Aid people and businesses to hold onto cash reserves for other more important purposes.

Web-based bartering and business exchanges are other ways that individuals and companies are exchanging goods and services and saving money, in fact, bartering can be a valuable sales strategy – bartering sites can bring new buyers and sellers together and create entirely new customer bases.

Can technology save us?

Over the last 120 years, humankind has regularly transformed dreams that were once unimaginable – even "miraculous" – into what we now take for granted. We have gotten off the ground, soared into space, and found cures for bugs we can't even see. Technology is already proving itself to be a key weapon in the fight against climate change, and with continued investment we may well find an enduring package of solutions. Here are some ways technology is making a difference:

For cities by the sea, there is potential (if not already utilized) for water desalinizers, ideally solar powered, to desalinate sea water. **It makes a great deal of sense to take the salt out of rising ocean water for domestic, agricultural and industrial use,** in fact, this technology has been proven and used for decades – after the Haiti earthquakes in 2010, the aircraft carrier U.S.S. Carl Vinson anchored off the country's coast and, using reverse-osmosis technology, its four water distilleries provided hundreds of thousands of gallons of fresh water to Haitians. [The Postquake Water Crisis: Getting Seawater to the Haitians.]

Aiming to provide a similar solution, an Israeli company is planning to build floating desalination plants that could supply water to a city of 850,000. There is potential for many of these floating desalination plants to be anchored off drought-stricken coastal areas to deliver vast amounts of water to people on land.

Technology is also taking **food production** into entirely new areas. In Japan alone, buildings are being converted into urban farms, Pasona Group Inc. allows employees to grow and harvest their own food – including rice – inside its Tokyo headquarters, and Mirai Co Ltd. has built one of the world's largest all-LED vegetable plants that uses only LED lamps to supply light to grow vegetables and ship 10,000 heads of lettuce per day.

Add to that, we also already have offshore wind farms, massive solar plants, printable solar panels, and on a smaller scale, technology to build 100% sustainable houses.

However, despite these incredible ideas, innovation and technology, we still need to 'clear the air' by reducing the carbon emissions that are warming the planet.
It appears the key to significantly reducing greenhouse gases (GHGs) (besides actually cutting emissions at source) is to find an abundant, nonpolluting alternative to (finite) fossil fuels – ideally one that can be seamlessly introduced and utilized by existing technologies.

Because small acts, when multiplied by millions of people, can transform the world.

One way to do this is to excite the creative juices of inventors and designers on a global scale. Governments worldwide should ignite an **X-Prize**–like challenge to spur corporations, researchers and private individuals to research ways to convert CO2 and other greenhouse gases into renewable energy or other useful forms.
But this only addresses future emissions.
What about greenhouse gases already in the atmosphere? We'll also need to find ways to reduce their levels, too. One method being investigated is **biochar**, produced by heating natural organic materials in a low oxygen, high temperature process called pyrolysis.

Production of biochar can result in the capturing of carbon emissions, or 'sequestration'. Biochar also has the potential to become a long-term carbon sink and play a significant role in offsetting GHG emissions produced by burning fossil fuels.

A vision of our future

Imagine the headlines….

"Oceans cooling and receding"
"Ice caps stop shrinking and are descending again!"
"Atmospheric CO2 concentrations and global temperatures falling."

These could well be the headlines our children and grandchildren read in the not too distant future….
if we act now.

Can we avert the worst effects of climate change and ensure Earth remains habitable for the next generation? This writer believes we can.

Will we do it? That depends on how many people are truly passionate about this issue, how many ***really*** care enough to act. We should educate ourselves on the facts, scare ourselves even, and use that emotion to, among other things, decide that we are going to stop watching the entertaining but ultimately worthless junk on our TVs, buying the piles of products and upgrades that we think we need and that are causing permanent damage to our planet, and instead start thinking and acting as though we understand that this world is the only one we will ever know and that everything we do has an impact and it's up to us to decide what that impact is.

Because small acts, when multiplied by millions of people, can transform the world.

This fight against climate change is essentially a fight against ourselves, our habits, our awareness, our very natures. It's us against us.
This is more than just a fight for our lives – this is a fight to ensure our children and grandchildren have a hospitable planet to live on, and for the very future of every species on our planet today.

We can do this.

If we ***really*** want to...

The decision is ours.

WRITER PROFILE

New Zealander **Jonathon Walsh** has been spreading his passion for the planet and sustainability issues since 2012 by teaching adults and school students about sustainability issues and how to grow 'no-spray' vegetables on rooftops, walls and gardens…while spreading some of the fun and satisfaction of urban farming.

Jonathon's training has shown more than 200 people how to become more self-sufficient, improve their health, and be kinder to the planet by growing their own fresh, healthy garden produce, capturing and recycling rain water, and recycling everyday products – all skills that are likely to become increasingly valuable in the face of climate change.

Jonathon is also director of Business Grow, a Tokyo-based company specializing in providing the following green business/sustainability services and advice:

- Urban farming and sustainability training
- Garden design, consulting, installation and maintenance
- Gardening demonstrations, food growing kits
- Vertical gardening, balcony gardening
- Business sustainability consulting.

E-mail: info@businessgrow.net **URL:** www.businessgrow.net/Green.htm