Dear Friends,

Happy New Year from all of us here at Ecology Action! 2018 was a “fallow year” at The Jeavons Center mini-farm, with the growing beds planted in compost crops, while we directed our energies to building our online resources and strengthening the program at our Victory Gardens for Peace site.

Periodically letting the soil rest and replenish itself is a practice as old as farming itself. But defining “fallow” as “resting” seems almost comical with a GROW BIOINTENSIVE garden. Checking for storm damage after a blustery night, looking at the growing beds and compost piles juicy with rain, green with cover crops above ground, teeming with roots, worms, bugs, beasties and microbes building the soil below, I see LIFE, practically singing with energy, recharged and primed to spring back into production when the seasons turn.

We all need fallow time – a moment to breathe, and to strengthen our “roots” – so we can direct our energy outward again. This is particularly true now, with turmoil – environmental, political, economic, emotional – buffeting us from so many directions. Taking a walk in the woods and listening to the wind in the trees; grounding yourself by working in the soil; or just taking a minute of focused quiet before getting out of bed in the morning – can be the difference between burnout and burning bright!

Looking back over the year, I am inspired, humbled, and honored by the dedicated people here at Ecology Action and across the globe who make up our ever-growing Ecosystem of Hope: the ones “burning bright” even when coping with difficulty, acting as beacons of empowerment to those around them, replenishing the soils of “their part of the earth – their garden”, energizing us all in the process, and keeping the GROW BIOINTENSIVE movement strong. These are the light-bringers: our hard-working interns, enthusiastic workshop and tour participants, our network of farmer-trainers and soil researchers, and our energetic international partners.

Together, we are leading the way to a better, more just world through truly sustainable, regenerative food sovereignty. It is a joy to catalyze and be part of this work.

For nearly to 50 years, we’ve demonstrated that closed-loop GROW BIOINTENSIVE® Sustainable Mini-Farming (GB) is a remarkable method that people of all ages and cultures can use. Now, as hunger, resource scarcity, declining soil fertility and climatic disruption are moving from the theoretical to a daily part of the news cycle, international organizations and agencies, scientists, NGOs, and activists are beginning to understand what we discovered through decades of dedicated work: small-scale farmers – the people who make up the majority of food-growers around the world— are our best hope for creating solutions to the challenges presented by climate change, hunger and poverty. AND that growing fertile soil is the best way to remove CO2 from the atmosphere.

Compared to conventional farming methods, GB saves huge amounts of water, builds soil fertility 60x faster than nature, increases yields and income, reduces or eliminates inputs and energy use, efficiently sequesters carbon to reduce global warming, and helps protect wild lands from agricultural impacts. Our job: show everyone we can reach how to use it.
The result of all our work – the thing we’re most proud of – is that through our programs, people learn how to feed themselves and their families sustainably and regeneratively, and no longer depend on destructive farming methods that damage soils, forests, rivers, wildlife, and other natural resources. *And each person who participates in our programs creates a positive ripple effect as they grow food successfully and teach the method to their neighbors.* As these grass-roots efforts spread, they not only strengthen local people, communities and ecosystems, but they also provide solutions to many of the serious challenges facing us all.

Through our work, millions of farmers, educators, government officials, and activists have already been trained directly, and through farmer-to-farmer training initiatives, and people are practicing Biointensive agriculture in 152 countries around the world. As the challenges to food security, social justice, and sustainable living continue to increase, we continue to grow our programs to reach out to an ever-greater number of people.

Like the garden, Ecology Action has grown its energy in 2018, and we’ve got a lot to show for it!

**SOME HIGHLIGHTS FROM OUR 2018 EFFORTS, AND PLANS FOR 2019 INCLUDE:**

**In the US and Online**

**The Jeavons Center** had no farm staffing in 2018. However, the site remained the administrative hub for Ecology Action’s national and international outreach programs, publishing and online programs, and global technical assistance coordination, with full-time staff working to expand our online reach as broadly and efficiently as possible. With funding secured for farm staff in 2019, we are seeking to hire full-time Biointensive farmers to work at the Jeavons Center and at Victory Gardens for Peace sites (see our ad at growbiointensive.org/Opportunities.html).

- In January, John Jeavons, Director of Ecology Action, and Matt Drewno, Manager of Victory Gardens for Peace, attended a **5-day GROW BIOINTENSIVE conference and workshop in Nicaragua**. Both John and Matt made presentations: Matt spoke on Achieving More with Less: Experiments in Growing a Complete Diet in as little as 1,000 Square Feet and John’s topic was Food for the Future: Now. More details on this conference can be found under “Key International Activities” below
- The Jeavons Center is providing direction for a cutting-edge **Soil Sustainability Research Project** taking place at VGFp, 14 Latin America sites, and two sites in Italy and Spain. The purpose of this research is to discover the smallest possible garden size that will provide a sustainable, complete annual diet for one person—including growing compost materials — and with a fraction of the resources.
- Ecology Action and VGFp signed a **collaboration agreement with the owner of the Stanford Inn in Mendocino, CA**, which has hosted VGFp since 2010. The agreement defines the administrative and financial responsibilities of each of the three signers and provides a site for the Mini-Farm – which has grown in size and in educational activity -- through 2020. We are excited to continue this partnership!
- Ecology Action gave a **3-Day Workshop** in March for 18 participants. One particularly inspiring participant was a man from Washington State who operates foster care on his farm for orphans and children rescued from abuse. Our **second 3-Day Workshop** was held in November, with 25 participants.
- We have started placing our **40 Self-Teaching Booklets and other publications online as ePubs**. The first release was an enhanced version of our popular Farmer’s Handbook, with an introduction and full color GB training posters added, free to the public. The majority of our English-Language Self-Teaching Mini-Series booklets have been converted to electronic format and can be purchased and downloaded from growbiointensive.org/ePubs. Additional publications will be added as they are formatted.
- John Jeavons started an **Action Topic blog** (johnjeavons.org) with new topics posted frequently. It is being used in the U.S. and globally—including by former EA Interns from Kenya, Ghana, Nigeria, Senegal, Latin America and Canada. Topics focus primarily on sustainability and education, as well as some philosophical aspects, with
the intention that farmers and farm leaders everywhere can use the ideas covered as inspiration to keep up their skills and their curiosity wherever they live. John will also be giving a 1-Day Workshop in Olympia, WA in 2019 (johnjeavons.org/workshops).

- **Booklet 38 How to Approach and Grow a 10-Bed Complete Diet Plus Compost Materials Growing Unit** and **Booklet #39 GROW BIOINTENSIVE: A Pattern for Feeding the World – A 46-Year Perspective and a Plan for the Next Decade** are in preparation for publishing online and in print in 2019.

- The Kiswahili translation of *How to Grow More Vegetables* is nearing completion and should be ready for publication by the end of the year. The updated Spanish translation of *HTGMV* is also in the process of completion. Both should be available online by early 2019.

- **Ecology Action continues to mentor farm leaders, giving technical advice for key projects and programs worldwide and because of our status as a non-profit, we were able to channel donations and grant funds to individuals and organizations including Juan Manuel Martinez’s ECOPOL, Peris and Samuel Nderitu’s G-BIACK, Lamine and Fatou Diawara’s Oasis GROW BIOINTENSIVE in Senegal, James Christie Fougere and Sharon Coombs’ Kootenay Society for Sustainable Living in British Columbia, Ephraim and Charity Chirwa’s and Thembi’s work in Malawi, and Mlesh Mlegwa’s Garden of Hope in Kenya. See more about our global projects under “International Partners and Colleagues.”.**

Our work is having a positive impact in far-flung corners of the world, and the ripples spread from each interaction. **The following, from August 2018, is an example of the communications we are blessed to receive.** We have edited it for brevity: “Greetings. I am Rev. Hesborne Apida, the Director of Eden Garden Farm and Resource Services Program in Kisumu, Kenya. 2 years ago my interest and vision to establish a Mini-Farm began when I contacted Ecology Action and you shipped me GROW BIOINTENSIVE books and reading materials. Today I am happy to report that our Mini-Farm, Eden Garden Farm, is running as we demonstrate to people and communities these skills and as we tackle and learn from challenges that arise. Our harvests have been wonderful. The concepts, skills, and principles of Biointensive gardening are truly working out fine. This season we have planted tomatoes and African indigenous vegetables and the harvest is beyond what I have ever grown or seen anywhere. One of our goals is to train care givers to the many suffering orphaned children, the elderly, widows, and such vulnerable persons so that they do not go hungry, as is often the case, and to pay some school fees for the children from selling surplus harvest.”

On the Mendocino coast, Ecology Action’s **Victory Gardens for Peace Mini-Farm** has developed into a strong biologically intensive demonstration, teaching, and research hub—with all the fundamental and growing-edge aspects of GROW BIOINTENSIVE available to the public. It was the primary venue for the bulk of our on-site teaching activities in 2018: has developed into a strong biologically intensive demonstration, teaching, and research hub—with all the fundamental and growing-edge aspects of GROW BIOINTENSIVE available to the public. It was the primary venue for the bulk of our on-site teaching activities in 2018: workshops, tours, classes, on-site internships, and apprenticeships. VGFP’s location at a popular vacation destination (Stanford Inn-by-the-Sea in the town of Mendocino) dramatically increases public exposure to these activities, as compared with the same programs if they were hosted at the more remote Jeavons Center or Golden Rule sites. We anticipate a further increase in activity at this site in 2019.
• The **Soil Sustainability Research Project** is being conducted to discover the possibility of growing all the food and compost materials for one person annually in as little as 1,000-2,000 square feet of planted surface. This research, which is also taking place in Latin America and Europe, will benefit smallholder farmers worldwide who have limited acreage and resources.

• **Two Nine-Saturdays Courses** were given in 2018. The first was designed as an introductory GB course, and the second was more advanced, focused on planning the design of GB farms and gardens. A total of 13 participants attended from **Mendocino County, CA, Palo Alto, CA, North Carolina, Vermont and Bermuda**.

• We hosted a young woman from Elon University in **North Carolina** in a special **2-Month GB Internship** so that she could be more effective as a manager of the Biointensive Farm at Elon in the fall of 2018.

• A woman from **Vermont** participated in our **6-Month Internship** and plans to use the skills she gains to start a seed bank and mini-farm when she returns home.

• Our **1-year Apprentice** was a woman from **North Carolina**, who wants to use the skills she learned with us to become a GB teacher.

• A woman from **Bermuda** is an **8-month Intern** interested in becoming the assistant garden manager at VGfP. (NOTE: You can “meet” our 2018 interns in our Fall eNewsletter at growbiointensive.org/Enewsletter).

• A **3-Day Teacher Certification Workshop** was given for our interns and apprentices. Also attending the workshop was a woman from **Mendocino County** who has worked as a community gardener at VGfP for 2 years, as well as a man from **Bermuda**, a low-lying island already impacted by rising sea levels, with very limited farmable soil per capita – exactly the situation that can benefit from the introduction of GB!

Just south of Willits, CA, Ecology Action’s **Golden Rule Mini Farm Site** had greatly reduced activity in 2018 due to funding shortfalls focusing primarily on smallest-scale diet model and sustainability research and development, encompassing 10 beds, with part-time staff. Data is collected and shared with other smallest-scale diet design researchers, including ECOPOL. This site also hosted our **3-Day Workshops**, open to the public. Depending on funding and staffing, we expect that the activity levels at this site will remain about the same in 2019.

**International Partners and Colleagues**

In **Kenya**, Samuel and Peris Nderitu continued work at their **GROW BIOINTENSIVE Agriculture Centre of Kenya (G-BIACK)**, training farmers throughout the country. In 2018, they trained 3,000 new small-holder farmers, as well as 400 school children. Most activities were focused towards introducing GB to three new communities in the arid Eastern Province, where 90% of the residents are farmers, but food production is low due to lack of rainfall, and poverty is endemic.

G-BIACK works with schools to offer environmental programs that teach GB agriculture, and that establish edible gardens and nurseries to grow trees that will be planted in the community. They are also is finalizing the building of an underground seed bank that will serve as a storage facility for indigenous seed collected from most regions of Kenya.

G-BIACK’s **Girls Empowerment Programme (GEP)** continues the work initiated in 2017 to empower young women who have finished their primary and high school education to improve their lives and gain financial stability. In 2018, over 150 girls were
trained in GROW BIOINTENSIVE skills, as well as textiles, cooking and baking and computer proficiency.

Because there are so many orphans in Kenya as a result of the AIDS crisis, G-BIACK started a program to help alleviate the problem of malnutrition in orphanages. Samuel reports: “GB gardens at these homes help supplement the diet with healthy and nutritious food. 21 students from our Girls Empowerment Programme (GEP) were sent to 21 different children’s homes with the aim of starting gardens. These girls have undergone training in GROW BIOINTENSIVE and thus are highly knowledgeable. Their mandate is to help set up the gardens and teach the children, as well as train the caregivers of the homes for sustainability purposes. As a result, more than 1,000 orphaned and vulnerable children have started eating healthy food from the gardens. The homes have appreciated the collaboration with G-BIACK because now they can produce food self-reliantly at low cost and with reliably good yields. The children and staff are learning lifelong skills, and our GEP students are gaining practical experience in planning nutrition-based food production and teaching.”

In November, Samuel attended Global Ecovillage Network conference in Zimbabwe where he taught participants about GB in one of the workshop sessions. In December, he attended the Tudor Trust conference in Uganda at the Colleges for Rural Community In Development (RUCID), then travelled to Sierra Leone, where for 10 days, at the request of the MADAM (an NGO working with the most vulnerable, disadvantaged and marginalized people in Sierra Leone), he trained all the partner organizations funded by nonprofit Bread for the World (more than 10 NGOs total).

Also in Kenya

Boaz Odour (EA Intern 2007), continued work with the Canadian NGO Organics4Orphans (O4O). In 2018, 170 people were trained in GB agriculture offered through a 1-month training program, and construction was completed on an expansion of their educational training facility so that it can now host up to 90 training program participants. O4O also works to train prison inmates in GB agriculture, empowering them with skills and knowledge that will enable them to give back to the community. Boaz reports positive feedback from people who are seeing improvements in health and reduced food costs as a result of growing their own vegetables. In 2019, O4O plans to collaborate with other non-governmental organizations to get more people trained in GROW BIOINTENSIVE and establish more garden plots in order to generate income from crops.

In 2018, Mlesh Mlegwa’s (EA Intern, 2016), Garden of Hope provided GB training to over 40 families and 120 participants from communities in Kenya. He also provided a weekly educational radio program to the community about GROW BIOINTENSIVE agriculture, environmental conservation, and nutrition-related topics. Through the radio program, Mlesh was able to provide information to the local community about the benefits of utilizing specific garden crops and herbs to aid in improving certain health conditions. Garden of Hope also partnered with a local primary school to train teachers and students in GB, and established an edible garden and tree nursery, where Mlesh made presentations to over 160 farmers/gardeners on how best to propagate plants during drought conditions. In addition, Garden of Hope partnered with Karibijua Association to assist with supplying irrigation and water for the school garden.
In Senegal

Fatou and Lamine Diawara—both former EA interns from Senegal—are still actively involved as Program Coordinator and Director respectively of the Oasis Grow Biointensive Association/ Fankanta GB Demonstration Garden (OAB) near Dakar. 46 people gathering for its 3rd yearly meeting. A new GB internship program was started this year, for three- and six-month interns, which is mainly attracting women. In 2018, Lamine offered the opportunity for participants to learn about GROW BIOINTENSIVE agriculture through online training sessions, and through courses offered at a private university, the Institute of Geomatics, the International Center for Practical Training, and at Fankanta.

In Malawi

Ephraim and Charity Chirwa, brother and sister team who interned at G-BIACK five years ago have taught 280 farmers from 10 communities GROW BIOINTENSIVE agriculture. To date, in partnership with lead farmers, they have trained over 4,800 people in Malawi. Many of their students are widows and children living in remote communities that are benefiting from GB agriculture through improved nutrition and food security. They write: “Empowering others in the community to lead is an important part of what we do as GROW BIOINTENSIVE trainers.”

Latin America and Europe

In 2018 ECOPOL (Ecología y Población)—our International Partner for Latin America—co-sponsored a 5-day GB Week with a 1-Day Conference at Nicaragua’s Universidad Nacional Agraria (UNA), with 20 participants from Bolivia, Chile, Peru, El Salvador, Honduras, Mexico, France, Italy, and Spain, plus an estimated 400 Nicaraguans participating in activities during the week-long event. The CEO of Friends of the Earth Spain, which is helping to fund GB workshops in Central America, attended. During the conference, the UNA announced they are establishing a 3-year program to train Biointensive Technical Specialists, and another Nicaraguan introduced their online GB Open University. ECOPOL Director Juan Manuel Martinez travelled around the country where with John Jeavons and Matt Drewno, they found a groundswell of GB activity in the gardens and grassroots organizations there.

Since the Nicaragua Conference, serious conflict has broken out in the country, suspending the GB program temporarily at the university. However, Juan Manuel writes that Biointensivistas are still active and aware that the production of food is more important than ever; a one-day GB workshop was given with many people involved, seed exchanges have taken place, and the online GB program is still functioning. It is our heartfelt hope that peace returns to the region soon so that this beautiful Biointensive oasis can continue to thrive.

In February, on his first visit to Cuba in 5 years, Juan found that professors at the Universidad Agraria in Havana are successfully researching and teaching the GB method, as well as maintaining an active national GB network. The professors told Juan they are even thinking of extending GB programs at the Universidad to the Master’s and PhD level!

On Juan Manuel’s trip back from his work in Argentina in March, he spoke with Urbelinda Ferrufino, leader of the GB movement in Bolivia. She told him she taught workshops in 2015-2016 for members of the army, with such excellent results that she is planning to train all the army units to use the GB method, so they can grow their own food.
At the end of April, Juan gave workshops in the Mexican states of Baja California Norte and Veracruz. The first was for a new NGO—Pachamama Comercia Justo—started by a young man who took a workshop with Juan some years ago and since then has established his own Biointensive demonstration/training garden. The second, in the mountains of Veracruz, opened the door to a region which until now has been too isolated (through lack of communication and media) to have a GB presence.

There are already four strong established centers of GROW BIOINTENSIVE activity Mexico, Nicaragua, Ecuador and Peru, which are spreading the method through the entire Latin American region. Working with these centers to expand GB even further into South America, in September, Juan Manuel made a 3-week teaching trip to southern Chile. Besides teaching 4 workshops and making presentations in many areas—all the way to Tierra de Fuego—he helped initiate the “Southern Cone” Training/Research/Demonstration Center. He worked with existing GB trainers in Chile to consolidate the efforts there, so that Chile becomes the fifth GB Center, bringing with it the ability to support GB activity in Argentina, Uruguay and Paraguay.

Because of the large number of people learning the GROW BIOINTENSIVE method in the region, increasing the number of certified GB teachers is key to maintaining the quality of GB teaching programs. To this end, three teacher certification workshops were given in Nicaragua and one in Mexico. As a result, 57 more people have initiated the GB Teacher certification process and will be certified once the data from their demonstration gardens is submitted and reviewed. Juan expects there to be 110 certified teachers in Latin America by mid-2019.

ECOPOL’s 2019 program will focus on bringing two more countries into the Southern Cone, increasing the number of certified teachers to reach a critical mass that will assure the system’s quality and professionalism, introducing the GB method to more universities, carrying out GB research, and collecting data at 14 demonstration sites to make the system’s reliability apparent to the public, creating GB professional materials, and finding new allies to spread the GB method even further and help fund it.

Agustin Medina and Marisol Tenorio, both GB Certified Master Teachers continue to work with Juan Manuel Martinez on GROW BIOINTENSIVE teacher certification programs and projects throughout Latin America, the Caribbean and Europe. In 2018, their training garden, El Mezquite, located in the state of Aquascalientes, Mexico, hosted and trained 3 apprentices and had successful ongoing tours of the demonstration gardens. Augustin and Marisol taught GB agriculture through 3- and 5-day workshops and courses offered at El Mezquite garden, at regional high schools and at the University of Aquascalientes. Special workshops were given to professionals from both non-governmental and governmental organizations interested in using GB agriculture to establish food sovereignty, with a goal of implementing GB gardens in 56 communities in the state, including the transformation of abandoned urban properties into productive GB food gardens. In addition, they participated in a monthly local fair-trade market that promotes the sale of crops grown at El Mezquite and other local biointensive gardens.
In Russia

Carol Vesecky, Director of Biointensive for Russia (BfR), reports that Dr. Ludmila Zhirina of the NGO VIOLA helped Irina Skiba found a new NGO, Legend of the Russian Estate, that now actively teaches GB along with Biodynamics and Permaculture in the Yaroslavl province. In 2018, Ludmila wrote a comprehensive GB curriculum that was approved for use in Russian schools. She also traveled to three northern provinces where, with her teaching teams, she held workshops for 240 Waldorf students, groups of teachers and high school and university level students from Russia and Germany. The team also provided webinars via SKYPE. Dmitry Filippenko of the Clean Baltic Alliance in Kaliningrad had 400 copies of the Russian translation of How to Grow More Vegetables printed to share with Ludmila Zhirina for distribution to teachers at workshops. Ludmila Zhirina and Irina Skiba presented their work in St. Petersburg at a conference attended by teachers from 14 Russian regions and Ludmila gave a presentation at the Russian Slow Food Agricultural Forum.

Through this work, in the past two years, 28 schoolteachers and 7 kindergarten principals in several regions have started projects to combine parts of Biointensive and SPARE (School Project for Application of Resources and Energy) in Central Russia. In 2018, several education institutions began GROW BIOINTENSIVE projects including teaching children how to grow seedlings using the GB method. Continuing this work, VIOLA will coordinate eight workshops in 2019 at model farms, schools, and experimental gardens in the Moscow, Kaliningrad, Voronezh, Yaroslavl, Vologda, and Karelia regions.

Igor Prokofyev, Natalya Koryagina, and Oleg Zavarzin of the Grassroots Alliance PERESVET conducted a one-day GB conference for teachers in Bryansk in April. Participants were supplied with the Russian translation of How to Grow More Vegetables.

BfR launched an international experiment “Citizen Diplomats in the Garden” in 2018, planning traditional vs Biointensive potato-growing comparison plots, and two tests of companion planting pairs, beets/beans and onions/carrots. A new map was created of locations where Biointensive has been taught with BfR’s support since 1994 in Eurasia and Europe, which you can see above.

In Canada

James Christie Fougere and Sharon Coombs, 2016 EA interns from Canada, maintained monthly contact with Ecology Action for technical assistance and mentoring by phone, text and e-mail for their demonstration, teaching and research Mini-Farm The Kootenay Society for Sustainable Living in British Columbia, and their globally relevant website (growsustainability.org/research-and-demonstration-site/). In 2018 they presented weekly tours of their mini-farm, performed grain variety trials with dozens of types of wheat, rye, and barley, as well as variety and spacing trials for all crops to elect the best edible and biomass GB yields for their cool climate, collecting and sharing valuable data with Ecology Action. They are also participating in Ecology Action’s 10-bed-unit research project. In 2019, they will expand their activities to include weekly GB workshop series and several full-day GB workshops, establishing an open-source seed bank, and building partnerships with schools and local organizations to increase GB outreach and education.
In the middle of winter, the “fallow season” of the year, it can sometimes seem as though spring will never come. But these reports from dedicated and caring people around the world are shining beacons of hope and courage, powered by the knowledge that each individual—working in their own garden, teaching the people around them—rather than being alone, is part of Ecology Action’s worldwide team, working together with this beautiful Earth and her people to grow a better future for us all. It fills me with gratitude and joy to be a part of this work.

And you are an essential part of this joyful endeavor.

Without you, and generous, forward-thinking people like you, not one of our projects would have a chance at success. Because of your donations, this hopeful light in my heart is reflected in the hearts of people like Samuel, Peris, Lamine, Fatou, Juan, Agustin, Marisol, Matt, Carol, Ludmila, James, Charity, Boaz, Sharon, Mlesh and the many others who are working hard to be the change we all want to see in the world.

As our challenges increase, energy for biologically intensive farming is building around the globe, enabling us all to grow solutions, and more people than ever are coming to Ecology Action in person, through the Internet, and by e-mail, learning to grow food, soil, communities, ecosystems and HOPE, in a beautiful, abundant and sustainable way.

Thank you, from all our hearts, for being a part of Ecology Action’s work. I hope that you will consider contributing to the fund for the coming season of outreach, training, and practical research. We literally can’t do it without you!

Best Wishes for a Joyous Winter and a Happy, Peaceful, and Abundant 2019!

John Jeavons
Executive Director

“People will be willing to change if they have a compelling vision and are provided with the tools to help them bring it into being. The vision must touch their core to engender the necessary passion as commitment needed to overcome the inevitable obstacles on the path to realizations.” —David Gershon

GROW BIOINTENSIVE workshop participants at our Willits Headquarters

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What is GROW BIOINTENSIVE?

Ecology Action has dedicated over 40 years of research to rediscovering the scientific principles that made millennia-old traditional farming systems like those of the Maya and the Ancient Chinese so sustainable and successful. These principles have guided us to the eight essential aspects that are the foundation of GROW BIOINTENSIVE Sustainable Mini-Farming System:

• **Double-Dug, Raised Beds** – to create a healthy environment for roots and beneficial soil organisms
• **Composting** – to provide healthy, inexpensive fertilizer that keeps the soil producing year after year
• **Intensive Planting** – to maximize efficiency and productivity, and to conserve water
• **Companion Planting** – to take advantage of the beneficial synergy between certain plants
• **Carbon Farming** – growing fertilizer while growing food
• **Calorie Farming** – growing the greatest number of calories per pound of food
• **The Use of Open-Pollinated Seeds** – to encourage farmer independence and regional food security
• **A Whole-System Farming Method** – using all aspects of the system to create a healthy, sustainable farm

This means that, using our GROW BIOINTENSIVE mini-farming techniques, small farmers can grow food using:

• **67% to 88% less water.** So they still may grow food in a drought, like the one taking place in Kenya right now.
• **50% to 100% less purchased fertilizer.** So they can still grow food even when they don’t have much money.
• **99% less energy than conventional agriculture,** while using a fraction of the resources. So they don’t contribute to agricultural pollution. In fact, GROW BIOINTENSIVE helps sequester carbon in the soil, which helps reduce greenhouse gas levels in the atmosphere.

...and that GROW BIOINTENSIVE, when used as recommended by Ecology Action, can also help farmers:

• **Produce up to 2 to 6 times more food per unit of land,** as compared with conventional agriculture. This means more food security and less poverty, particularly for those who need it most: small farmers in developing countries.
• **Build fertile soil – sustainably, through carbon sequestration – up to 60 times faster than nature.** So farmers can continue to feed their families and communities into the future, without destroying their environment.
• **Reduce the amount of land needed to grow equivalent amounts of food** and compost materials by as much as 50% or more, as compared with conventional agriculture. This means protected ecosystems, more wild-land, safer wildlife, and a healthier, happier planet for us all.

48 Years.
152 Countries.
Millions of people educated.
Millions of garden beds created.
Billions of pounds of food and fertile soil grown.

...and we’re just getting started.

Grow Hope. Grow Abundance.
GROW BIOINTENSIVE!