

## GARDENS/MINI-FARMS NETWORK

Ag Missions: USA-TX, MS, FL, CA, AR, NM, WA; México, Rep. Dominicana, Cote d'Ivoire, Nigeria, Honduras, Kenya, Malawi, Mozambique, Haití, England, Nicaragua, India, Uzbekistan. [Minifarms@gmail.com](mailto:Minifarms@gmail.com),

Workshops in organic, no-till, permanent bed gardening, mini-farming, mini-ranching, worldwide in English & Español.

### Appropriate Technology for Villages

The following are things people can do for themselves. Most require no or little funds. Many of these can be a business. More information can be obtained from me or on the internet. Ken Hargesheimer

1. Permanent Beds: No alley cropping, no SALT, no hedge rows, rocks, grasses. Use on land up to 75° slope.
2. Gardens/Mini-farms: Organic, 0-till in permanent beds. This stops all erosions problems. ¡¡Never burn the fields!! That burns up fertilizer. These will double or triple yields and will reduce labor by 50% compared to traditional methods. No digging; no plowing; no chemicals, no machinery. Use bucket drip irrigation as below. Do not buy anything, from anybody for the garden or farm [except seed?]. There are farmers in every country using these.
3. Mini-ranches: Legumes/grass for grazing and/or with pens [never tie in stalls] using cut & carry. Small animals in moveable pens over forage beds. Use drip to grow during the dry season.
4. Dairy: [cows, goats, sheep, camels, buffalos] Legumes & grass in beds. Rotational grazing or cut & carry.

5. Poultry: Organic legumes & grasses in beds with moveable pens.
  6. Rabbits: Raise on pasture or in colonies; not in cages.
  7. Urban gardens/mini-farms: A large percentage of peoples' food is produced in the cities and towns.
  8. Urban mini-ranches: Small & micro-animals. Use legumes/grasses for grazing and/or with moveable pens over forage beds and/or pens using cut & carry.
  9. Livestock: Begin with Muscovies and goats. Free CD from [cta@cta.nl](mailto:cta@cta.nl) and minifarms@gmail.com
- School gardens: Excellent teaching tool. Food for children. Trains future farmers. Setting Up School Gardens: [fao.org/docrep/009/a0218e/0218e00.htm](http://fao.org/docrep/009/a0218e/0218e00.htm);  
[gardenorganic.org.uk/schools\\_organic\\_network/index.php](http://gardenorganic.org.uk/schools_organic_network/index.php)
- 10.
  11. New food crops that should be grown are spaghetti squash, jatropha, popping sorghum, stevia, endamame soybeans, moringa tree. More interest in this than anything I do or teach. Seeds are taken to workshops. Sources: [groworganic.com](http://groworganic.com); [willhiteseed.com](http://willhiteseed.com); [echonet.com](http://echonet.com); [southernexposure.com](http://southernexposure.com);
  12. Soil: Healthy soil produces healthy plants, for high yields, for healthy people and prevents most disease, pest, weed and erosion problems. To have healthy soil, add organic matter. Bring it to the farm [leaves, grass, sawdust, manure] and/or grow green manure/cover crops & leave on top of the soil as mulch.
  13. Fertilizers: Do not buy. Use legume/non-legume gm/cc.
  14. BioChar: Do not make. It takes too much labor, destroys the advantages of organic matter added to the soil, promoted by non-farmers as the solution to food problems. Organic farming is the solution.

15. Compost: Not necessary except for special uses. Too much time and labor.
16. Vermicomposting: Not necessary; too much time and labor. Worms in the beds will compost everything.
17. Hand tools: Planting hoe, weed cutter, scythe, hedge trimmers, machete/cutlass, etc. Blacksmith can make them. Sample tools are taken to workshops.  
[wassan.org/sri/Weeders\\_Equipments.htm](http://wassan.org/sri/Weeders_Equipments.htm)
18. Bucket drip irrigation: A bucket supplies water to a dripline[s]. Kits [US\$15 in most countries - [chapinlivingwaters.org](http://chapinlivingwaters.org)] or farmer made dripline [US\$3]. Water is carried from a stream, well or pond. Grow during the dry season. 20 liters per day for a 33 meter row. I can tell you how to make the DIY ones.
19. Graywater for irrigation: Bath, dish, lavatory, clothes washing water can be used.
20. Wastewater for irrigation: Must be purified before using. Use three ponds with plants.
21. Water purifying [drinking]: Moringa oleifera seeds. Solar water purifier.
22. DIY water well drilling: US\$50 to \$100 each. Water-for-All/Agua Para Todas.  
[geocities.com/h2oclubs/](http://geocities.com/h2oclubs/)
23. Rainwater harvesting: [kedarainwater.org](http://kedarainwater.org)
24. Seed: Use open-pollinated and save the best seed each year. No GMOs. No hybrids.
25. Living fences: Tree species in every country for this. Not necessary to buy wire and post.
26. Sloped land: Build permanent beds on up to 70° slope. No grass, trees, rocks, alley cropping. No erosion.
27. SRI: [system of rice intensification] <http://ciifad.cornell.edu/sri/listservs/index.html>;  
[echonet.org](http://echonet.org). Double yields; save 50% water.
28. SRI for other crops: sugar cane, finger millet, cotton, wheat, mustard.

29. Coffee: Organic, shade-grown.
30. Hoophouses: Sheet of plastic and PVC pipe to grow during cool or cold weather.
31. Shade for vegetables: One over cool season crops may make it possible to grow during warm weather.
32. Value-added: Using AT tools listed below, a farmer can add-value to his crops/animal products.
33. Marketing: Sell locally and/or to farmer-owned cooperatives and/or to Fair Trade.
34. [www.i4at.org](http://www.i4at.org): covers many areas of AT.
35. Pot-in-Pot Cooling System: Food cooler for arid climates. Mohammed Bah Abba, Box 10591, Kano, Nigeria. [Mobah@hotmail.com](mailto:Mobah@hotmail.com)
36. Water pumps: hand/pedal-powered; solar-powered. [echonet.org](http://echonet.org) [kickstart.org](http://kickstart.org), [self-help-approach.com](http://self-help-approach.com),  
[http://blog.greenenergytv.com/blog/renewable-fuels/0/0/foot-powered-water\\_ide-india.org/ide/treadlepump.shtml](http://blog.greenenergytv.com/blog/renewable-fuels/0/0/foot-powered-water_ide-india.org/ide/treadlepump.shtml)
37. Solar cookers: Cook food with the sun, free. Do not buy them; make them. [solarcookers.org](http://solarcookers.org)
38. Stoves: [darfurstoves.org](http://darfurstoves.org)
39. Solar electricity panels: Light homes, classrooms, etc. Can power radios, TVs, computers, etc. Use to recharge batteries. <http://biodesign.webeden.co.uk>; Graham Knight [English & French] [DIYSolar@btinternet.com](mailto:DIYSolar@btinternet.com); [waame.sn/](http://waame.sn/) (french); Haiti - [vssnet.org/index.html](http://vssnet.org/index.html); Benin - [gawa.nu/stories/story\\_solar.htm](http://gawa.nu/stories/story_solar.htm); <http://ntong-benin.ifrance.com/> (french); Malawi - <http://solar-aid.org/>, for videos click on 'Solar videos'; Kenya - [kcyp.net](http://kcyp.net); Ghana - [graphicghana.info/article.asp%3Fartid%3D14797+ghana+CASOLS&hl=en&gl=uk&ct=clnk&cd=5](http://graphicghana.info/article.asp%3Fartid%3D14797+ghana+CASOLS&hl=en&gl=uk&ct=clnk&cd=5); Blog at [solar-aid.org/?gclid=CKac4bfh3YkCFQnoEAodIVQSFA](http://solar-aid.org/?gclid=CKac4bfh3YkCFQnoEAodIVQSFA); [idrc.ca/en/ev-111741-201-1-](http://idrc.ca/en/ev-111741-201-1-)

DO\_TOPIC.html; [californiasolarcenter.org/ssh.html](http://californiasolarcenter.org/ssh.html); [youtube.com/watch?v=B8zEBrH2bPU](http://youtube.com/watch?v=B8zEBrH2bPU); [youtube.com/watch?v=i6htYGp1rus](http://youtube.com/watch?v=i6htYGp1rus); [californiasolarcenter.org/ssh.html](http://californiasolarcenter.org/ssh.html) for schools; [cnn.com/2010/LIVING/02/11/cnnheroes.wadongo/index.html](http://cnn.com/2010/LIVING/02/11/cnnheroes.wadongo/index.html); [http://sustainabledevelopmentforall.org/index.php?option=com\\_content&view=category&layout=blog&id=4&Itemid=10](http://sustainabledevelopmentforall.org/index.php?option=com_content&view=category&layout=blog&id=4&Itemid=10); [toughstuffonline.com/](http://toughstuffonline.com/)

40. Solar water purifiers: [solarcookers.org](http://solarcookers.org); [jalmandir.com](http://jalmandir.com) [English, Español, French]; [echonet.org](http://echonet.org)
41. Solar water heaters: A drum, painted a dark color, will heat water. For hotter water and/or in cold climates, put it in an insulated box with a clear cover. For more hot water, add more drums. DIY on internet
42. Solar driers [dehydrators] for food. DIY on internet.
43. Solar collectors: heat homes, schools, etc. DIY on internet. Breadbox.
44. Bicycles: Should be used by everybody. Used bicycles and mechanic training for developing countries. [bikesnotbombs.org](http://bikesnotbombs.org); [ibike.org/economics/workbike.htm#ppower](http://ibike.org/economics/workbike.htm#ppower); [bikesfortheworld.org](http://bikesfortheworld.org); [pcei.org/vbp](http://pcei.org/vbp); [workshophouston.org/index.php](http://workshophouston.org/index.php); bicycle pickup - [projectrwanda.org](http://projectrwanda.org); [calfeedesign.com/bamboo.htm](http://calfeedesign.com/bamboo.htm); [technologyforthepeople.com](http://technologyforthepeople.com);
45. Bicycle trailers: Drill holes and bolt it together. Use for ambulance, cargo, taxi, family transportation, tank for water or marketing. Use bamboo, wood, pipe, square tubing, angle iron, etc. Garden cart to harvest crops. Plans: [ibike.org](http://ibike.org) & [minifarms@gmail.com](mailto:minifarms@gmail.com);
46. Bicycle-snow: equipped with ski and tread. [www.ktrakcycle.com](http://www.ktrakcycle.com)
47. Trailer-snow: equipped with skis.
48. Pedal-powered tools/machines: [humboldt.edu/~ccat/pedalpower](http://humboldt.edu/~ccat/pedalpower), [http://bikesnotbombs.org/app\\_tech](http://bikesnotbombs.org/app_tech). <http://web.mit.edu/teresab/www/Bicilavadora/index.html> [washing machine]. I have two

documents of others' ideas. [compatibletechnology.org](http://compatibletechnology.org); [mayapedal.org](http://mayapedal.org); Nut sheller [ground nut, shea, pecan, neem, wing beans, pine] [fullbellyproject.org](http://fullbellyproject.org); <http://www.cesta-foe.org/index.html> [Spanish]; hand-powered bicycle - [tudelft.nl/live/binaries/1f807e82-77bf-4695-a701-77adc33c9fdb/doc/DO-06-2-3africa.pdf](http://tudelft.nl/live/binaries/1f807e82-77bf-4695-a701-77adc33c9fdb/doc/DO-06-2-3africa.pdf)

49. Computers/pedal powered: [wi-fiplanet.com/columns/article.php/1454991](http://wi-fiplanet.com/columns/article.php/1454991)
50. Portable DVD video players: They plug into a TV or have 7" to 10" screens, operate on 220, 120 & 12 v. and cable to connect a 12 v. battery. Use a solar panel to charge the battery. These can be used to teach people anywhere on earth. Every school should have at least one. People who cannot read and write can learn by listening and watching. Videos or Data/information in Power Point.
51. Laptop computers: These will play video, DVDs, CDs and VCDs. Do not need to connect to the internet. Can be old; just so they will play DVDs. Remember that a DVD holds 6x more than a CD.  
Pedal-powered laptop computer:  
[http://www.olpcnews.com/countries/afghanistan/updates\\_from\\_olpc\\_afghanistan\\_1.html](http://www.olpcnews.com/countries/afghanistan/updates_from_olpc_afghanistan_1.html);  
Computers operate internally on 12 volts.
52. School: [olpcnews.com](http://olpcnews.com); [khanacademy.com](http://khanacademy.com) [free online school courses]; Websites can be downloaded into your computer using free [htrack.com](http://htrack.com) and/or [real.com/realplay](http://real.com/realplay) Burn to a DVD is to use on other computers or print, etc.
53. No electricity, no telephone line for a computer and printer? Use a cellphone and a 12 v battery. [pbkamoyani@myway.com](mailto:pbkamoyani@myway.com) is doing it. Solar panel to charge the battery. Connect the computer directly to the 12 v. battery. <http://biodesign.webeden.co.uk>; [biodesign@fast4.net](mailto:biodesign@fast4.net); [minifarms@gmail.com](mailto:minifarms@gmail.com) for info.

54. DVDs: Free on many subjects. Contact NGOs, government. [cd3wd.com](http://cd3wd.com); Agriculture and Bible dvds are available from [minifarms@gmail.com](mailto:minifarms@gmail.com); [togethertv.org/videos-africa.shtml](http://togethertv.org/videos-africa.shtml) -Produced by people around the world.
  55. Soil-cement bricks/roof tiles: Made by mixing soil with cement and adding water. The mix is put into a press. The press cost US\$150 in most countries. They are cured and equal to a fired brick. Contact the appropriate technology NGO in your country. <http://www2.unam.na/pdf/RevSTFocus/Part-3of3.PDF>
  56. Soil-cement floors: Cement is mixed into the soil, wet and packed down. Equal to a concrete floor.
  57. Soil-cement paths & roads: Cement is mixed with soil, wet and packed.
  58. Fences: Trees for living fences are in every country; use soil-cement to set post.
  59. Latrines/composting toilets: [http://weblife.org/humanure/chapter8\\_2.html](http://weblife.org/humanure/chapter8_2.html); Fertilizer
  60. <http://www.plantsciences.ucdavis.edu/LTRAS/itech> & [www.efn.org/~itech](http://www.efn.org/~itech): Hand operated. Farm-Scale Food Dehydrator, Narrow Flame Propane Weed Burner, Propane Weed Burner for the Garden, Garlic Clove Separator, Garlic Trimmer, Weeding Spade, Serrated Hand Hoe and Mower Blades, Grain Huller for Rice, Spelt Wheat, Quinoa and Millet, Conversion of a Leaf Shredder/Wood Chipper into a Grain Thresher, Vacuum Packing System for Seed Storage, Winnower, Small Electric Winnower, Bug Zapper
  61. Appropriate Technology: [www.popularmechanics.com/appropriatetech](http://www.popularmechanics.com/appropriatetech), [http://villageearth.org/pages/Appropriate\\_Technology/index.php](http://villageearth.org/pages/Appropriate_Technology/index.php);
  62. Recycling plastic for profit: [http://farmradio.org/english/radio-scripts/93-9script\\_en.asp](http://farmradio.org/english/radio-scripts/93-9script_en.asp)
- Important Information:
1. Papyrus sanitary: <http://www.ugpulse.com/articles/daily/homepage.asp?ID=549>

2. Periodicals: All are free by email or pmail. [tearfund.org/tiliz](http://tearfund.org/tiliz) [download publications, free] Footsteps [English, French, Portuguese, Español, KiSwahili]; [LEISA.info](http://LEISA.info) [English, Bahasa Indonesia, French, Español, Portuguese, English/India, Chinese]; ECHO News [echonet.org](http://echonet.org) [English, Español]; Spore magazine - [sporem@cta.int](mailto:sporem@cta.int) [English & French]; RUAF [English, Español, Français, Arabic, Chinese, Português, Turkish] [ruaf.org](http://ruaf.org);
3. Micro-loans: Small loans to create or expand a farm or business. No collateral required. In all countries. [developments.org.uk](http://developments.org.uk); [kiva.org](http://kiva.org); [GlobalGiving.org](http://GlobalGiving.org); Finca International, [villagebanking.org](http://villagebanking.org); Grameen bank.
4. Idealist: 54,000 organizations. [idealist.org/if/idealist/en/Invite/default](http://idealist.org/if/idealist/en/Invite/default)
5. Health: Where There is no Doctor [90 languages], Where There is No Dentist [English, Español], Midwifery [English, Español], Where Women Have No Doctor, Women With Disabilities. [hesperian.org](http://hesperian.org)
6. Internet: free programs - [download.com](http://download.com)
7. Free Educational Software: This was compiled by a Nabuur village and is extensive. 9 pages. Request a copy from [minifarms@gmail.com](mailto:minifarms@gmail.com)
8. School Curriculum [free]: [curriki.org](http://curriki.org)
9. ECHO: Gardening and farming info. Unusual seed, ag conference. [echonet.org](http://echonet.org)
10. CD3WD 4.0: Over 1000 books, etc for free on appropriate technology, farming, health, etc. <http://www.cd3wd.com/CD3WD/index.htm>
11. [self-help-approach.com](http://self-help-approach.com) appropriate technology, micro-enterprise, etc.
12. Agriculture Workshops: I teach organic, 0-till gardening and farming in permanent beds using bucket drip irrigation anywhere in the world. Funds must be provided. Ken Hargesheimer, [minifarms@gmail.com](mailto:minifarms@gmail.com)



13. Farming DVD-organic, 0-till in permanent beds using bucket drip irrigation. Free. minifarms@gmail.com.
14. Bible DVDs: Jesus film; Bible Study Resources; Children's Bible Study with Jesus film; etc. Free. English, Spanish, French, Nepal, Russian. Send postal address to minifarms@gmail.com.
15. AIDS: [www.aidsalliance.org](http://www.aidsalliance.org) AIDS dvd, free from minifarms.
16. Teaching aids: [www.talcuk.org](http://www.talcuk.org)
17. [go-opensource.org/go\\_open/episode\\_1/](http://go-opensource.org/go_open/episode_1/)
18. Improve your English: [worldenglishinstitute.org/](http://worldenglishinstitute.org/) Study online, by email or by post, free.
19. <http://literacybridge.org>: talking machine

PermaNet® 2.0 LLIN has a WHOPEP recommendation, which declares it safe and effective for the prevention and control of malaria.

PermaNet® Curtains complement bed nets and fight other vector-borne diseases such as chagas, dengue, filariasis and leishmaniasis.

The use of ZeroFly® plastic sheeting during refugee camp construction effectively reduces malaria mortality, which may account for up to 50% of all deaths in such camps.

ZeroFly® Tent is a disease controlling shelter making use of long-lasting insecticide impregnated materials. No other refugee tent offers this long-term disease controlling effect.

LifeStraw® Personal is a portable water purifier for prevention of common diarrhoeal disease – can be carried around for easy access to safe and clean drinking water.

LifeStraw® Family is an instant microbiological water purifier with a high flow rate, efficacy as per US EPA standards and longevity of more than 15,000 litres.

[www.vestergaard-frandsen.com](http://www.vestergaard-frandsen.com)