We encourage everyone to listen and learn the stories of your elders and record them for those who are to follow. There is a wealth of history and insight just waiting to be shared. If possible record them and keep the tapes in a safe place. Through this project and others like it we can keep the voices and stories of our Appalachian heritage with us... to remember and learn.

Artificial Wetlands

A second demonstration example of artificial wetlands was completed to process greywater (from sinks and showers) at the ASPI cordwood office building. Designed by ASPI's resident waste water expert Jack Kieffer, S.J., the system was built during late autumn of last year by veteran grounds coordinator, Lewis VanWinkle and Johnny Loudermilk. This construction follows on the heels of another built for the Solar Demonstration Building (Summer, 1994). While the earlier version was restricted by the steep slope of the terrain, this one is limited in the space and so a novel method of switchbacking of the draining had to be achieved. This is built on what was formerly the front *impatiens* beds and has a standard 120 feet of bed length. We will be experimenting with a variety of wetland plants. For further details see ASPI Technical Paper 30.

Winter Gardening Tips

Planning: Good organization and production requires planning. Three questions need to be answered when making long range gardening plans: What varieties of vegetables will be grown? How much of each type will be planted? What will be the planting dates? Yields are somewhat weather dependent, but the gardener can make decisions about how much of the total garden space to devote to each crop. Variety is the key to a healthy garden ecosystem and adds interest and balance to meals. We suggest growing about thirty varieties each year. Try different crops to suit your family's personal preferences, as well as what grows best in your garden. When to plant is dependent upon the micro-climate of your area. Yours may differ from neighbors no more than a mile away, as does ours here at ASPI. We have find that traditional spring vegetables grow best in the fall and early winter. Using solar greenhouses and permanent and temporary coldframes we extend the growing season.

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Buying: Now is the season to spend some time gathering garden supplies and perusing seed catalogues. Even the coldest and meanest day of the year looks brighter, as we hopefully prepare for spring. Consider buying from cooperative groups or those who cater to organic growers.

Growing: People generally regard winter as a time to let the garden rest. However, some beds could be tilled to grow winter greens. Fortify these against the bitter breezes and snows. In this upper Southern zone we find that wind barriers with proper mulching allow a number of hardy greens to prosper throughout the winter. These include: collards, some types of spinach, turnips, kale, and broccoli.

Occasional Essay

Cuba's Sustainable Agriculture

Lowell Wagner (ASPI Board Member)

"Have faith in us; we'll make it, have faith in us!" were the parting words of Rogelio, as he exhorted us from the front of the bus. We had just finished our visit of the Animal Traction Center and Rogelio Sanchez, director, like a cheerleader of sustainable agriculture, urged us to cheer them on to success. Such was the enthusiasm and positive attitude of farmers, technicians, and researchers as we toured Cuba.

What drew us to Cuba was curiosity and an interest in learning how the country has made a complete turn around in its agriculture practices. Due to the fall of Cuba's chief trading partner, the Eastern Bloc countries, Cuba lost its main petroleum supply. This caused major changes in the style of agriculture. With Eastern Bloc trade closed Cuba lost 53% of petroleum, 77% of chemical fertilizers, 62% of pesticides, and 70% of animal feeds. Up to 99% of beans were imported, 44% of fish, 38% of milk and dairy products and 94% of oil. Land Calorie intake had fallen as much as 30%.

Drastic measures were taken to move from "classic agriculture" to "alternative agriculture." Cuba is officially in it's "special period" because of pioneering work done in the 80's by technicians and researching in the area of sustainability, the rapid change was made easier. Cuba's population is 2% of the Latin American population and impressively it has 12% of the same area's scientists - adding to the scientific base of agriculture. It is baffling that with this major change in Cuban agriculture, and by far the largest move toward "sustainable agriculture" in the world, it is largely unknown in the world.

Our group of 25 Americans represented a variety of professions including soil scientist, weed ecologist, Extension Specialist, 4H Agent (me), organic consultants, and other related to agriculture and others very much interested in Cuba & its experiment with sustainability. The trip was sponsored by Global Exchange and planned and directed by the Cuban Ministry of Agriculture. Over the ten days we visited various phases of agriculture, concentrating on the sustainable aspects of each and how it was accomplished.

Here are several highlights of the Cuban move from "classic agriculture (highly mechanized a la Imperial Valley, California) to "alternative agriculture".

Urban Gardens -- Giving vacant lots in suburban areas to community groups to garden and grow what they could to supplant their food ration.

Vermiculture -- Culture of earth worms. The worms are used in animal feed and their castings supplement organic fertilizer.

Animal Traction -- The use of oxen to perform planting, cultivating, etc. instead of gas powered tractors. Also adaptation of machinery to animal use. Development of machinery to be used by animals and tractors to lessen compaction.

Integrated Pest Management; Use of Entomophagous Insects & Entomophathogens -- Close pest monitoring with the use of pesticides and the use of insects that eat or parasitize other insects, and the use of diseases to control insects.