

Chapter 14

Resilience never ends

In writing this book we had four objectives:

1. Transform your understanding of how Earth's ecosystems adapt and transform to sustain the web of life—summarized in eight emergent qualities of resilient ecosystems
2. Show how you can use those same qualities in any living system
3. Help you focus on a particular piece of land where you will explore and deepen these qualities.
4. Show how Southern states and counties within those states differ on sustainability/resilience measures and on expert opinion about the path Southern States should take toward sustainability.

We don't pretend that we have found the final answers on how to move Southern food and agricultural systems toward sustainability and resilience. Rather we have tried to define the questions which will lead to particular local answers for a particular system

Review of the Eight Qualities of Resilient Systems

What follows are some closing thoughts to help you strategize in your own life. Now that you've read through and developed a deeper perspective on these eight factors, take this moment as a refresh and an opportunity to reflect and consider what the future holds for your own agricultural system.

1. Modular Connectivity. Collaboration between universities, research centers, and farmers; cooperation and knowledge sharing between farmers are some of the most important connections and routes for the information flow and feedback needed for resilient systems³⁸⁵.

Resilient systems are sensitive and responsive to feedback, though in a modular fashion. Modular sub-systems have enough independence that damage or failure of even a key sub-system has low probability of generating failure throughout the system. Yet each component of the system is connected enough to detect and respond to changes throughout the system, thus being able to respond to change. Resilient

³⁸⁵ Berkes, F., J. Colding, and C. Folke, editors. 2003. *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge University Press, Cambridge, UK; Darnhofer, I., S. Bellon, B. Dedieu, and R. Milestad. 2010. Adaptiveness to enhance the sustainability of farming systems: a review. *Agronomy for Sustainable Development* 30:545-555; Dubini, P. and H. Aldrich, 1991. Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 6:305-313; Milestad, R., Westberg, L., Geber, U. & Björklund, J. 2010. Enhancing adaptive capacity in food systems: learning at farmers' markets. *Ecology and Society* 15:3 29; Shava, S., M. E. Krasny, K. G. Tidball, and C. Zazu. 2010. Agricultural knowledge in urban and resettled communities: applications to social-ecological resilience and environmental education. *Environmental Education Research* 16(5-6):575-589; Dubini, P. and H. Aldrich, 1991. Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 6:305-313.;

connectivity has a few strong connections and many weak connections. Our experience working both in poor regions of the US and in 30 other countries has shown us that successful individual businesses only lead to resilient development when they are part of a collaborative network of businesses and organizations.

What does that look like in your own community? This particular aspect focuses greatly on the people, businesses and opportunities that abound around you! In rural areas it can be difficult, particularly if you're the first generation farmer on your land, to feel connected to your community. It is not only helpful, it's imperative to form those relationships with your neighbors, suppliers, distributors and market outlets. You may feel like you're "not really the social type" or, "more of a loner", but in times of disturbance this lone-wolf mentality is highly detrimental. As we saw in the MSAN case study, without the support from his community, Will Reed would have had a tremendously hard time recovering from the tornado that struck his land while dealing with his daughter's diagnosis of leukemia. Though the disturbances that are bound to come to your business may be smaller, they may also be larger and now is the time to reach out to your community members to develop meaningful relationships built on trust and generosity.

Another aspect of this is the modularity, the space between yourself and others that is crucial to long term resilience. Though these two things may seem to be in contrast to one another, consider the situation which dominates poultry and hog production in the South. Through contracts, corporations in essence own the livestock that you produce. The company can require expensive facility upgrades or cancel the contract at a whim.

These kinds of contractual agreements are the antithesis of modularity, tying you irrevocably to another systems' needs, reliant on the corporation to respond fairly and responsibly to disturbances that come to your farm.

A resilient business is one that is able to disconnect at a moment's notice, severing ties from a diseased or failing system. Or similarly, if your system becomes too diseased or begins to fail, it is your responsibility to withdraw, remove yourself from the flow of commerce in order to reorganize in the wake of disturbance.

Modular Connectivity is a constant push and pull between building relationships, fostering successful ones and also keeping a keen awareness for problems, or issues that are coming. Maintaining the ability to contribute, or withdraw, as the need arises.

Moreover when parties can work together they are using many aspects of resilient systems including complimentary diversity, asset building, redundancy as well as conservative innovation.

2. Locally Self-organized. Ecosystems unmanaged by man are finely attuned to local conditions. Agroecosystems often are not. The above discussion noted how lack of local control undermines the beneficial impact of modular connectivity on resilience.

Does your own region or community foster opportunities for local self-organization? Are there regular meeting places for those in the agricultural field to gather and exchange ideas, generate local identity or support one another? Moreover, are there organizations in your area, like the Land Stewardship Project in Minnesota, who advocate for farmers on political issues? If not, is there a larger organization that you and your local peers can contribute to like the National Sustainable Agriculture Coalition so that you can

generate feedback from your local area to feed into government policy? It is through local sensitivity and feedback that reform occurs both nationally and locally.

If you're interested in fostering more local self-organization consider starting a discussion group, resource sharing cooperative, a team focused on local agricultural issues like incoming CAFO's, or other means of providing a platform for people to share their skills, resources and abilities. Self-organization occurs as individuals organically work together gradually providing support, opportunities and networking over the long term. Just as with connectivity, in local self-organization trust and generosity is required to build the foundation for long term resilience.

To be sure, any self-organized system is constantly adapting as the "Selves" that make up the system are constantly changing with new generations coming in and older generations stepping down. Flexibility is key in maintaining a self-organized system that is robust, responsive and moreover resilient.

3. Increasing physical infrastructure. This quality is reflected in such indicators as increasing water harvesting capability and producing less runoff, increasing organic matter, making trees and permanent pastures part of systems, building soil organic matter, and infrastructure when decreasing the need to import nutrients or export waste³⁸⁶. Assets are also the components of the system which show complementary diversity. Maintenance of heirloom seeds and engagement of elders, incorporation of traditional cultivation techniques with modern knowledge, programs for preservation of local knowledge³⁸⁷ all reflect this quality.

There are likely many assets already present in your community, whether it's a town square, an old meat packing plant, latent fields with owners too old to farm them, entrepreneurial types that are looking for opportunities, farming equipment that is waiting for a new owner. What great infrastructure possibilities do you see around you and how could you work with others to make them more accessible to your community?

Infrastructure doesn't have to cost lots of money and can even be right under our noses previously labeled as waste! It takes a dose of creativity to fully realize what assets abound around you, but be sure that they are present! What in your area has been mislabeled as waste? How can you develop waste into a resource?

³⁸⁶ Ewell, J. J. 1999. Natural systems as models for the design of sustainable systems of land use. *Agroforestry Systems* 45 (1-3):1-21; Milestad, R., and I. Darnhofer. 2003. Building farm resilience: the prospects and challenges of organic farming. *Journal of Sustainable Agriculture* 22(3):81-97; Robertson, G. P., and S. M. Swinton. 2005. Reconciling agricultural productivity and environmental integrity: a grand challenge for agriculture. *Frontiers in Ecology and the Environment* 3(1):38-46; Naylor, R. L. 2009. Managing food production systems for resilience. Pages 259-280 in F. S. Chapin III, G. P. Kofinas, and C. Folke, editors. *Principles of ecosystem stewardship: resilience-based natural resource management in a changing world*. Springer, New York, New York, USA.; Van Apeldoorn, D. F., K. Kok, M. P. W. Sonneveld, and T.A. Veldkamp. 2011. Panarchy rules: rethinking resilience of agroecosystems, evidence from Dutch dairy-farming. *Ecology and Society* 16(1): 39.

³⁸⁷ Gunderson, L. H., and C. S. Holling. 2002. *Panarchy: understanding transformations in human and natural systems*. Island Press, Washington, D.C., USA; Cumming, G. S., and J. Collier. 2005. Change and identity in complex systems. *Ecology and Society* 10(1): 29; Shava, S., M. E. Krasny, K. G. Tidball, and C. Zazu. 2010. Agricultural knowledge in urban and resettled communities: applications to social-ecological resilience and environmental education. *Environmental Education Research* 16(5-6):575-589. <http://dx.doi.org/10.1080/13504622.2010.505436>.

What the resilient person looks for in an asset is long life, quality build, replicability and local availability. In every purchase and acquisition keep these things in mind, ensuring that you can replace, replicate or repair your equipment and infrastructure—in short keep the need for redundancy in mind when developing infrastructure. A fragile, temporary asset isn't a resilient one. Look for ways to build for a future that is flexible and largely unknown.

4. Redundant or Back-ups. Resilient systems have back-ups and replenish their components. Redundancy means several of each component are present and they are replaced when lost. Redundancy which promotes resilience is responsive to needs of the system. Overpopulation does not occur. The resilient system has mechanisms to control excessive fecundity. Skills, abilities, functions are also reproduced and passed on to the next generation. Diversity is closely related to redundancy since diversity limits dominance of any particular component. Planting multiple varieties of crops rather than one, keeping equipment for various crops, getting nutrients from multiple sources, and capturing water from multiple sources all are examples of redundancy contributing to resilience³⁸⁸. Investment in infrastructure and institutions for the education of children and adults, support for social events in farming communities³⁸⁹ is another example. Redundancy inevitably decreases efficiency of the system, perhaps the most glaring contrast and intellectual hurdle for profit-oriented social ecological systems.

In many ways redundancy also relates to infrastructure as any valuable physical asset must be replaceable, ideally with extra parts handy in case of emergency. Are your assets backed up? Do you have equipment to fill in if your preferred tools break? Do you keep spare parts for your vehicles or tractors? If not, do you know where you can get parts either new or used?

On a different note, what will happen if you are injured or called away due to family emergency or other disturbance away from the farm? Do you have someone(s) who knows how to operate the mainstays of your farm, the essential activities like feeding animals and watering your crops? Without these people in your community to back you up, you risk losing your income and your farm if you're unable to operate it in person. It would be better to divert income to someone who is operating the farm for you, rather than losing it altogether due to your absence.

Similarly, what's your plan for the future? Your retirement and passing on your farm? There are many opportunities to pass on your farm to a beginning farmer, land trust, or family member but it takes planning. If someone is working closely with you, have you asked them about taking over the farm someday? Are there family members who are interested in taking over when you want to retire? What organizations are in your area that could take on the ownership of your land, ensuring that it stays in agricultural production in the future?

³⁸⁸ Low, B., E. Ostrom, C. Simon, and J. Wilson. 2003. Redundancy and diversity: do they influence optimal management? Pages 83-114 in F. Berkes, J. Colding, and C. Folke, editors. *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge University Press, Cambridge, UK; Darnhofer et al. 2010, *ibid*; Walker et al. 2010, *ibid*.

³⁸⁹ Buchmann, C. 2009. Cuban home gardens and their role in social-ecological resilience. *Human Ecology* 37(6):705-721. <http://dx.doi.org/10.1007/s10745-009-9283-9>; Sundkvist, A., R. Milestad, and A. M. Jansson. 2005. On the importance of tightening feedback loops for sustainable development of food systems. *Food Policy* 30(2):224-239. <http://dx.doi.org/10.1016/j.foodpol.2005.02.003> 2010, *ibid*; McManus, P., J. Walmsley, N. Argent, S. Baum, L. Bourke, J. Martin, B. Pritchard, and T. Sorensen. 2012. Rural community and rural resilience: What is important to farmers in keeping their country towns alive? *Journal of Rural Studies* 28(1):20-29. <http://dx.doi.org/http://dx.doi.org/10.1016/j.jrurstud.2011.09.003>.

The resiliency of our food system is reliant on land holders making these decisions and planning for the future. Today millions of acres of land are poised to change hands, either to individual stewards who mindfully build soil and develop regional markets and local enterprises, or to the conglomerates that are intent on monopolizing the global food system.

5. Complementary Diversity. The peculiar diversity of resilient systems is almost a chaotic diversity, but complementary in function. One hallmark is the manipulation of outputs to generate more inputs through either the narrowing or closing of the waste cycle. In addition, complimentary diversity is made by a variety of crops, markets, sources of inputs, and spatial heterogeneity all reflecting resilient diversity. Heterogeneity of features within the landscape and on the farm; diversity of inputs, outputs, income sources, markets, pest controls all reflect this diversity in resilient systems³⁹⁰. Collaborating with multiple suppliers, outlets, and fellow farmers; crops planted in polycultures that encourage symbiosis and mutualism also show this resilient diversity³⁹¹.

What we must remain ever vigilant of is constructing diversity that is complementary rather than diversifying for the sake of diversifying. So often in sustainable agriculture publications and in conferences diversity is a buzz word, tossed around within nearly every field of research. What is highlighted less is the need for complementary enterprises, plant production and animal husbandry. What we find in our resilience research is that often the more complimentary things we put together, the better the overall health of the system.

If you are a rancher with large grazing areas, is your land dominated by one species of grass? Have you considered the benefits of combining different types of grasses, herbs and legumes as a grazing or cover cropping mixture? Do you plant the same crops every year? Can you integrate animals in your cropping scheme?

There are a myriad of ways to include the different flora, fauna, and fungal kingdoms together to develop a chorus of complementary services. In nature we see cooperation more than competition. Animals and plants feeding one another, spreading the others territory ever wider. Fungus and bacteria working in tandem with different plants to develop nutrient delivery systems, withstand drought conditions and any variety of stresses.

Beyond the farm, complementary diversity contributes to our social systems as well. As we develop more modularly connected systems that maintain a focus on local self-organization it behooves us to look for complementary partnerships that are diverse, adding to the knowledge and resource pool. How could another somewhat unrelated enterprise help your own? Say a school system that has a need or desire for a farm tour or hands on workshop for the youth. Perhaps an elder group of retirees who could

³⁹⁰ Altieri, M. A. 1999. The ecological role of biodiversity in agroecosystems. *Agriculture, Ecosystems and Environment* 74 (1-3):19-31. [http://dx.doi.org/10.1016/S0167-8809\(99\)00028-6](http://dx.doi.org/10.1016/S0167-8809(99)00028-6); Ewell, J. J. 1999. Natural systems as models for the design of sustainable systems of land use. *Agroforestry Systems* 45 (1-3):1-21. <http://dx.doi.org/http://dx.doi.org/10.1023/A:1006219721151>; Berkes, F., J. Colding, and C. Folke, editors. 2003. *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge University Press, Cambridge, UK.

³⁹¹ Axelrod, R. M., and M. D. Cohen. 1999. *Harnessing complexity: organizational implications of a scientific frontier*. Free Press, New York, New York, USA; Picasso, V. D., E. C. Brummer, M. Liebman, P. M. Dixon, and B. J. Wilsey. 2011. Diverse perennial crop mixtures sustain higher productivity over time based on ecological complementarity. *Renewable Agriculture and Food Systems* 26(4):317-327. <http://dx.doi.org/10.1017/S1742170511000135>

provide advice or connections for you in the community? Resilience, in its need for adaptability requires us to think outside the box and look for relationships we hadn't considered in the past. Similar to the connections the flora made with the fungal kingdom during the last great extinction, finding symbiotic ways that each could preserve the life of the other. The change in atmosphere and nutrient availability demanded a reorganization of these two kingdoms with those few plants and fungus that had developed mutualistic relationship thriving in the new environment. Where do you have those needs today? What are you missing on your own farm that through complementary diversity you could amend to face the challenges of today and tomorrow?

6. Conservative Innovation and Flexibility. Resilient systems are open to new ideas while retaining ideas which work from the past. That is, they have a conservative flexibility. Practical learning is valued, as are elders and old seed varieties. Flexibility also applies to the whole system where it is manifested in the qualities of reforming and reorganizing, discussed below.

Since resilience requires the ability to come up with uniquely appropriate responses in diverse situations, the system needs a variety of approaches. Ecologically resilient systems stress multiple, overlapping strategies rather than single silver bullets³⁹². Collaboration between universities, research centers, and farmers; cooperation and knowledge sharing between farmers reflect the quality of flexibility of resilient systems³⁹³.

How can you help to inspire more creativity and openness in your community's responses to regional problems? You may be called upon to facilitate a change, helping others to work together and generate local solutions to problems that arise. Successful facilitation of resilient systems means consensus-building around new ideas. The facilitator must get rid of any desire for a particular outcome. They must thrive, as do farmers and entrepreneurs³⁹⁴ in unsettled, turbulent, chaotic conditions. Adjustment to chaotic situations requires a mixture of pragmatic, instrumental ties and emotional, spontaneously formed bonds of social capital. Social ties with fellow entrepreneurs result in new ideas to resolve chaotic situations.

On the farm, how do you react to new ideas that are proposed to you? Do you shun them because you know what's best for your operation? Are you willing to listen to new ideas and weigh the possibilities of changing your age old habits? Though those habits were developed from often hard learned lessons, there are innovations occurring nearly every day from all over the world to develop more effective ways to farm.

³⁹² Cate, J.R. and M. Hinkle, 1994. *Integrated Pest Management: the Path of a Paradigm*. Washington, D.C.: National Audubon Society.

³⁹³ Berkes, F., J. Colding, and C. Folke, editors. 2003. *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge University Press, Cambridge, UK; Darnhofer, I., S. Bellon, B. Dedieu, and R. Milestad. 2010. Adaptiveness to enhance the sustainability of farming systems: a review. *Agronomy for Sustainable Development* 30:545-555; Dubini, P. and H. Aldrich, 1991. Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 6:305-313; Milestad, R., Westberg, L., Geber, U. & Björklund, J. 2010. Enhancing adaptive capacity in food systems: learning at farmers' markets. *Ecology and Society* 15:3 29; Shava, S., M. E. Krasny, K. G. Tidball, and C. Zazu. 2010. Agricultural knowledge in urban and resettled communities: applications to social-ecological resilience and environmental education. *Environmental Education Research* 16(5-6):575-589; Dubini, P. and H. Aldrich, 1991. Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 6:305-313.;

³⁹⁴ Johnes, G., Kalinoglou, A. and A. Manasova, 2005. Chaos and Dancing Stars: Nonlinearity and Entrepreneurship. *Journal of Entrepreneurship*, 14: 1-19.

Don't underestimate the importance of conservatism in innovation. Maintenance of heirloom seeds and engagement of elders, incorporation of traditional cultivation techniques with modern knowledge, programs for preservation of local knowledge all reflect this quality. It is through the interaction of those with experience and those with ideas that we see the most effective and usable innovations.

7. Ecologically self-regulating (Works with Nature) means that the chaos of unmanaged systems is valued and is incorporated into the structured environments we build. This applies to our farms, cities and neighborhoods as nature is key to the continuation of our species. This aspect of resilience places a value on the preservation of uncultivated land, left to the natural cycles of insects, grassland birds, wildflowers and other naturally occurring qualities in unmanaged ecosystems. These non-cultivated, purposely non-managed, ecosystem assets are accompanied by the managed assets crucial to our agro ecological systems. Farms that maintain plant cover and incorporate more perennials, provide habitat for predators and parasitoids, use ecosystem engineers such as soil fauna, and align production with local ecological parameters are naturally more resilient³⁹⁵ than ones that stress the use of chemical fertilizers and pesticides, excluding nature as much as possible for the sake of one, or just a few, crops.

Where are you including nature into your plan? Are you purchasing wildflower seeds and native grasses alongside your annual vegetables or seasonal livestock? Do you appreciate the benefits that woodlands provide to your pastures and produce fields? Do you feel like you're fighting the natural systems around you, constantly "keeping them at bay" in your pursuit of production?

It is through our desire to maintain thriving soils, woodlands and waterways that we stand to develop a planet that is not only resilient in itself, but resilient in its ability to support our human needs.

8. Reorganizing, reforming, embracing chaos for transformation. Resilient systems are continually reforming themselves. In social ecological systems this is reflected in regular turn-over of leadership, no totalitarian leaders, inheritance tax, and mandatory retirement. Reformation is intimately related to self-organization and modular connectivity. Farmers and consumers are able to organize into grassroots networks and institutions such as co-ops, farmer's markets, community gardens, and advisory networks³⁹⁶.

Resilient systems continually form new systems out of the old. Farmers and entrepreneurs often have an intuitive understanding of the formation and transformation of systems that many researchers and economic development specialists lack. The bureaucratic and entrepreneurial mindsets are like oil and water.

³⁹⁵ Sundkvist, A., R. Milestad, and A. M. Jansson. 2005. On the importance of tightening feedback loops for sustainable development of food systems. *Food Policy* 30(2):224-239. <http://dx.doi.org/10.1016/j.foodpol.2005.02.003>; Ewell, J. J. 1999. Natural systems as models for the design of sustainable systems of land use. *Agroforestry Systems* 45 (1-3):1-21. <http://dx.doi.org/http://dx.doi.org/10.1023/A:1006219721151>; McKey, D., S. Rostain, J. Iriarte, B. Glaser, J. J. Birk, I. Holst, and D. Renard. 2010. Pre-Columbian agricultural landscapes, ecosystem engineers, and self-organized patchiness in Amazonia. *Proceedings of the National Academy of Sciences* 107(17):7823-7828. <http://dx.doi.org/10.1073/pnas.0908925107>.

³⁹⁶ Levin 1999, Holling 2001, Milestad and Darnhofer 2003, Atwell et al. 2010, McKey et al. 2010

Reductionist "systems analysis" popular in academic and bureaucratic models has not predicted natural phenomena well, according to von Bertalanffy³⁹⁷ due to the failure to "deal adequately with open systems, the class to which all living systems belong."

Open systems are by definition unpredictable, chaotic and continually forming and reforming new wholes. Many competing impulses are intruding on each other in chaotic systems. The chaos of open systems creates adaptation which enables such seemingly chaotic phenomena (such as brain and heart activity) to produce resilience. Ditto has found evidence that excessive order, not chaos, may be the cause of nonfunctional behavior in complex systems. Epilepsy is highly ordered firing of brain neurons in contrast to normal chaotic firing. Heart attacks are preceded by smoothing of the chaotic firing of heart muscle cells. Brain waves in coma patients are extremely orderly while brain waves in sleeping patients are chaotic.

Due to the negative connotations of the term chaos, some social scientists prefer the term transformation systems to stress the key feature of chaotic systems: the ability to dynamically transform themselves³⁹⁸.

The "systems thinking" farmer gives her agroecosystems a completely unique character. The farmer's management decisions control much of the structure of the agroecosystem. In your own system, whether the integrity and functioning of a system is maintained depends on your ability to respond properly when the system is disturbed and moreover to anticipate disturbance. A "basic observation of landscape ecology is that modern agricultural landscapes are in a constant flux of change"³⁹⁹, and the farmer (or other system manager) is the organizer who turns the flux into a reorganized system of production and profit.

How do you see yourself anticipating changes in the market, environment, or climate? Then too, how do you see yourself responding? Are you focusing just on what's happening now without a care for potential emergent futures? Do you feel that the market will remain the same no matter what?

Resilient agriculturalists are sensitive and attentive to the changes ahead, looking for innovative ways to channel their current resources into meaningful changes that mitigate damages down the road. Through attention to the coming changes and shifts you can build a resilient system that is responsive, robust and ready for the unknown. Truly, the previous 7 factors of resilience all lead to transformation; assets and redundant systems supplying the backups and replacements; modular connectivity and local self-organization strive to develop the social climate needed to withstand unprecedented change; ecological integration (working with nature) is a fundamental shift that calls for transformation of our systems in the *now*.

A final reflection before you lay this book aside and prepare to head into a more resilient, responsive and robust future, consider yourself in this equation. As we discussed in the previous chapter on infrastructure, *you* are truly your greatest asset. It is also true that you can be a great asset to your

³⁹⁷ von Bertalanffy, L., 1967. General Systems Theory. *Social Science Information*, 6:125-136.

³⁹⁸ Loyal, D. and R. Eisler, 1987. Chaos and transformation: implications of nonequilibrium theory for social science and society. *Behavioral Science*, 32:53-66; McWhinney, W., 2007. Growing into the Canopy. *Journal of Transformative Education*, 5: 206-220.

³⁹⁹ Bunce, R.G.H., and R.H.G. Jongman, 1993. An introduction to landscape ecology. In Bunce, R.G.H., L. Ryczkowski and M.G. Paoletti (eds.) *Landscape ecology and agroecosystems*, Lewis Publications. Pp. 3-10.

community, your region, your country and our world as you strive to develop systems that are truly resilient; something rarely seen in this day and age.

It is your opportunity to help pave the way to a resilient food system that is capable of handling market shifts, climate change, water shortages, high gas prices and ever growing pressures on our worldwide food system. It will take innovative strategies paired with lessons we've learned from our ancestors; the accumulation of real and tangible infrastructure that lasts; developing a keen and respectful partnership with nature; building a new kind of community that is integrated yet separated enough to isolate problems before they spread; and finally, the willingness to transform into something new.

Where will be *your* biggest contribution? What changes are you planning to make within your own business? How are you going to integrate these ideas and practices uniquely to your own projects and enterprises?

Perhaps you're wondering, "*How can I become more resilient?*" and maybe you're wondering "*Where can I learn how to help my farm/food systems become more resilient?*" To answer these questions you have to first know how you stack up on each of the qualities of resilience—i.e., how resilient you are right now and where you need to improve. Contact us at delta@deltanetwork.org and we'll provide an assessment tool which will answer these questions for you.

We are already in the next phase in the resilience project which will provide an online assessment of farm level resilience. Stay in touch with us as the beauty of resilience unfolds throughout the land.

Join our interactive web discussion.

Whether your system is a household garden or a thousand acre farm, let us know how you are doing and what epiphanies you have about resilience in your system. Continue the discussion at <https://meadowcreekvalley.wordpress.com/projects/land/>.