

**From:** Joseph Buttner  
**To:** [Aquaculture2018 - ARS](#)  
**Cc:** [Joseph Buttner](#)  
**Subject:** RE: Input for 5-year ARS Action Plan  
**Date:** Sunday, August 26, 2018 4:38:26 PM

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In response to your (NIFA and ARS) request for input into aquaculture research, extension and education programs as you develop the next 5-year ARS Action Plan, I put forth the following input:

**What is your business:**

My colleagues and I are based at the NorthEastern Massachusetts Aquaculture Center and Cat Cove Marine Laboratory, Salem State University. Our primary business can be characterized as “education”. We instruct aquaculture, dive and other aquatic courses as well as advise students, provide technical assistance and conduct primarily applied research. Our primary service area is Massachusetts north of Boston; however, we make extensive contributions inland, south of Boston and regionally. As a functional hatchery, we are a major provider of softshell clam spat and, surprisingly, tilapia fingerlings for K-12 schools that are permitted by the Department of Fisheries and Wildlife to hold fish. Other initiatives include assisting with zebra fish production and maintenance for the local Biotech industry, nurturing development of small to modest scale aquaponics systems, demonstration of long-ling culture of mussels in federal waters, and assisting colleagues in Liberia with development/implementation of an aquaculture training program.

**What is the largest constraint to growth and expansion of your sector of aquaculture?**

Bureaucracy and resistance to change are, in my opinion, the biggest impediments to aquaculture development. The apparent answer to a typical bureaucrat or administrator question is to create a committee, funnel money to the group and study the problem.

More generally, many people are uncomfortable, unfamiliar and resistant to aquaculture. Traditional agriculture people grew up with and embrace land-based food production such as row crops, livestock, or poultry. Aquaculture is different, not part of their experience, aptitude or training. Similarly, a good portion of the U.S. population are entrenched in their ways. Fishermen are hunters and gatherers; they don't readily accept aquaculture as it involves different skill sets and mindset; although, their children are more receptive. Consumers along the coast are seafood savvy, but inland just a few dozen miles “fish” are deep fried and consumed infrequently.

The challenge is generational. We must work on youth, which is happening and takes time. Educating youth about food production and security is increasingly a challenge as more youth are urban, distant from farms and live increasingly in a two dimensional, video world. Tours and summer programs are effective educational and motivational tools.

**What do you see as the greatest short-term, 1-4 years, research and extension needs?**

Much of the research and extension community is graying. We need replacements that can overlap with experienced professionals so mentoring, training, and networking can occur. We don't want to lose what has been gained and learned. Additionally, jettisoning retired specialist would be a BIG mistake. They possess

a wealth of experience and, often, the desire and capacity to contribute. Concurrently, they are free of the teaching, committee, professional, familial and financial constraints that challenge and dilute the efforts of younger professionals. We should use their skills more effectively. They may work for cost without needing a salary or indirect charges, a real financial saving. Too much emphasis in academia and, perhaps elsewhere, targets immediate impact and financial gain (e.g., this year, this semester). A longer-term approach that encourages and facilitates networking is needed.

**Over the longer term, what do you see as the greatest research and extension needs over the next 5-10 years?**

Two primary issues, (1) new people are needed to replace those retiring and, (2) embracing new technologies to transfer information, educate and motivate people. Also, we as knowledgeable authorities must become more politically active. Policy makers must appreciate factual information and be comfortable/confident that they can access the best available information and sound advice from the research and extension community.

**What is most effective communication strategy to reach and inform farmers of new solutions to problems or better technologies?**

A good educator must emphasize, appreciate and understand her/his audience. There is no one model suitable for all situations. However, being able to bridge with your audience is critical. Good interpersonal skills, being truly knowledgeable and competent in your field, and identifying a sequence that is appropriate, embraceable and presents a reasonable probability for success is critical. We must build bridges, not walls.

I prefer to share generic and initial information by phone or email when an inquiry first arrives. The next step is to meet personally, their end or mine depending upon the scenario. Once rapport and dialogue have been established, then guidance, interaction, collaboration and networking proceed. In most cases, interaction goes no further than the first step of sharing information to an inquisitive taxpayer. Perhaps 3-5% of my inquiries mature to the collaborative stage, which has led to some extremely gratifying experiences for all participants.

I sincerely hope this information prove useful and wish you success with your important endeavor.

With best regards,

dr joe

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