State of IPM Report - 2016

Developed by the National IPM Coordinating Committee at its October 18-19, 2016 Meeting

State of Programs and Perceptions on Sustainability

The Programs and Perceptions on Sustainability section of this report was developed from participant questionnaires completed at the close of the October 18-19, 2016 National IPM Coordinating Committee meeting, which was attended by 60 leaders associated with IPM programs in the United States.

Half of those attending (30) filled out the questionnaire at the end of the meeting. Respondents identified their professional affiliations as: Extension 36.6%, IPM Centers 33.3%, Research/Extension 6.7%, Research 6.7%, Research/IPM Centers 6.7%, Extension/IPM Centers 3.3%, NIFA 3.3% and other 3.3%. The table below provides a summary of the responses from all survey participants.

Summary - All Survey Participant Responses (n=30)

	Federal	**State**	**End-User**	**Pest Mgmt Industry**
Primary funding source for respondent's IPM program	62%	28%	6%	3%
	Increased	**Decreased**	**Same**	
IPM Program Funding	48%	30%	22%	
Percentage Change	28%	26%		
	No	**Yes**		
Sustainability of IPM Programs - current funding and funding model	52%	48%		

A majority of the programs represented were federally funded. Most had seen increased funding during the last 10 years. The average percentage change in funding reported among programs was similar. About half the respondents thought programs were sustainable with current funding and the current funding model. University extension and research respondents were more pessimistic about the sustainability of funding than were IPM Center respondents (data not shown). Responses from programs in which states were the primary funding source were generally more optimistic about program sustainability (data not shown). Funding levels have declined in some IPM programs over the last 10 years. Generally, programs are coping by diversifying sources of funding, but many programs have lost IPM extension/research capacity.

Key IPM-related Issues of National IPM Coordinating Committee Attendees

Participants at the 2016 National IPM Coordinating Committee (NIPMCC) Meeting provided input for this section of the State of IPM Report in two sessions; Ideas Informing the Future – the New IPM; and IPM Communication and Accountability**.** Participants were divided into six small groups. Each participant/group had the opportunity to provide input on 12 questions across several topical areas. Their responses have been summarized in approximate priority order. The information provided was used to develop this report and inform our initial steps toward development of a vision for the "New IPM" - an enhanced IPM future, building on long-accepted IPM principles and integrating new technologies and approaches based on new science and tools. We expect this report to serve as conceptual guideline from which IPM programs are built nationally. The intended outcome is a renaissance in IPM leading to robust and sustainable urban and rural programs, positive stakeholder impacts and the development of a widely recognized and valued IPM culture in America.

IPM Program Funding

By far, the most common issue described by attendees was the need for federal funding for Extension IPM Programs

- supporting, at a minimum, base-level funding for Extension IPM programs in all U.S. states and territories. Under the current funding model, as costs increase and initiatives are needed to address emerging needs, IPM programs will not have adequate resources to meet demands. Full deployment of the "New IPM" concepts and science will require increased funding for IPM research in emerging areas **(phytobiomes, molecular/genetic science, novel pest (insect, weed, disease) monitoring, utilization of big data in support of IPM objectives, IPM research at the ecological/landscape levels, etc.).** Increased funding will be needed to support extension programs in every state in order to move new research-based IPM technology to stakeholders and users.

Stakeholders and Priorities

Committee responses indicated that stakeholder involvement in IPM programs was critically important. It was deemed important in all kinds of programs; in programs for farmers, urbanites, schools, underserved communities and international communities. The importance of relationship building between IPM practitioners and leaders of these groups was emphasized. Participants at the NIPMCC meeting stressed the importance of developing IPM program priorities at the local level. Currently, most extension programs engage effectively with local stakeholders to develop priorities for local programs. NIPMCC participants felt priorities set at the local level should be aggregated to the state, region and national level. Some of the Regional IPM Centers develop lists of regional priorities, but priority lists are not currently available in all regions. Aggregation of priorities from states to regions, and from regions to the national level is a logical way to proceed, but the process for priority aggregation has not been developed. Since local programs need to be driven by local priorities, regional and national priorities if aggregated such that they address all or a majority of local priorities would be voluminous and of little value.

Instead, regional and national priorities should be broad and over-arching. A list of National IPM priorities would be valuable to policy makers, granting agencies and state IPM programs. It would help programs focus on the foremost IPM-related issues. The NIPMCC thorough APLU is an appropriate body to develop and publish (website) a list of National IPM Priorities. A list of national priorities would provide national unity and would contribute positively to our ability to communicate with stakeholders and policy makers with "One Voice" – a concept that was one of the primary themes that emerged at the 2016 NIPMCC meeting. Recapping, the optimum program model should involve significant local stakeholder input and elimination of all federal funding within a state or territory is incompatible with maintaining a strong national IPM program.

One Voice – National Program Issues Coordination

Communities, states and regions of the U.S. differ in many ways (rural/urban, climate, soils, water availability, culture, ethnicity and attitudes of the people). It is not surprising, therefore, that stakeholder-based IPM programs also differ. Contradictory and mixed messages from programs are not only possible, but likely. There are, however, consistent ideas and themes that are in common with IPM programs across the nation. NIPMCC responses indicated that national IPM research and outreach programs should aggregate program focus and priorities from local stakeholders to the national level. Possible models might involve state IPM Coordinators, USDA Regional Technical Committees, Regional IPM Centers and the NIPMCC. Additional input or approval may be solicited from federal agencies through NIPMCC representation on the Federal IPM Coordinating Committee (FIPMCC). NIPMCC suggested that coordination of focus at the national level could be accomplished by a National IPM Coordinator or by the NIPMCC. Messaging in support of national IPM programs to our advocacy groups

should be consistent and of "One Voice", representing important national interests and stakeholder groups.

Partnerships, Collaborations and Communication

NIPMCC responses emphasized the importance of partnerships, collaboration and communication in IPM program development, delivery, reporting and outreach. Key partners include: stakeholders (citizens, commodity groups, environmentalists, conservationists, schools, urbanites, etc.), land grant and other universities, Extension, Research, NIFA, Regional IPM Centers, USDA Regional Technical Committees, IPM working groups, consultants, FIPMCC, IR-4, NPDN, advocacy organizations, the pest management industry (synthetic and biologically-based pesticides, monitoring tools, pest resistant cultivars, etc.) and other IPM-related groups. The committee recognized a need for improved communication among these groups (the "One Voice" concept). Meeting participants recognized the need to communicate effectively despite existing silos (departments/disciplines, states/regional differences, agencies, urban/ag/school IPM, conventional/GMO/organic production, etc.) to develop multistate, transdisciplinary teams to address difficult IPM-related issues.

IPM Success Stories and Writers/Marketers of the IPM Message

State IPM Extension programs generate numerous IPM successes and success stories. Success stories are generated by research and extension professionals, State IPM Coordinators, professional writers at LGUs, popular press writers (newspapers, Ag press, specialty crop press, urban pest management press, and others). Professional societies and Regional IPM Centers also employ professional writers that produce IPM success stories. In addition, annual and final reports are written by State IPM Coordinators to comply with USDA NIFA grant and capacity funds requirements (REEport and NIMISS), and other grant requirements. Hiring additional writers/marketers was suggested by some of the NIPMCC participants as a way to improve public awareness of IPM successes. The consensus was, more writers are not needed. What is needed is a process to aggregate, package and disseminates success stories. This information could inform organizations that advocate for IPM and could be used to inform the public about IPM successes. Online training for State IPM Coordinators was recommended to improve their skills in success story writing.

Regional IPM Centers

Regional IPM Centers were recognized by the attendees as important in regional organization, promoting collaboration, providing resources (online, funding, program evaluation, etc.), development of success stories, and recognition of programming successes and excellence. Center roles in aggregation of priorities and reports – providing regional "One Voice" messaging to national advocacy groups, and facilitating information flow back from the national level to states was supported by meeting attendees. However, some attendees felt the resources used by the Regional IPM Centers could be better used for IPM program implementation in the states, and priorities/reports could be aggregated from states directly to the national level. Better definition of the roles of IPM Centers was a need expressed by some attendees. Consistent with the "One Voice" concept, the NIPMCC needs to develop consensus on the role of IPM Centers to avoid mixed messages that may distract from our issues-based focus.

Supporting Underserved and International IPM Needs

The consensus of committee members on educating traditional U.S. stakeholders, underserved and international stakeholders held that attention to language and cultural differences was necessary to ensure access of all clientele groups to IPM education. Assessment of teaching methods to ensure that they are appropriate for the learning environment and local conditions was also viewed as

important. Some committee members recognized that barriers, such as international student access to grant funding, exist and suggested these barriers be removed.

Development of the Next Generation of IPM Practitioners and STEM Education

Attendees highlighted the need for programs to develop the IPM practitioners and scientists of the future. Youth/student awareness of careers in IPM, internships, youth/student mentoring, teaching networks and web- enabled communication/education (including social media and YouTube) were identified as important components that would help address this need. Greater emphasis on STEM education to promote interest in science, technology, engineering and math; and 4-H, FFA and other ag-related programing to develop student interest in agriculture are needed.

Technology and Ag Literacy

Recognizing that the way people access education is changing, the committee highlighted the need to embrace social media, video, infographics and other web-based communication technologies to reach large numbers of people. The committee also recognized that people are using these media resources to support narratives about food production systems and food safety that are not supported by scientific evidence (GMOs, pesticides, organic, etc.). Attendees recognized the need to support Ag Literacy by teaching people the facts about agriculture and that innovative use of modern outreach technologies will be needed to accomplish Ag Literacy goals.

Priority Summary:

- Improve national capacity to support Extension IPM programs in all states and territories to deliver the technologies of the "New IPM" to users and practitioners
- Improve funding for IPM research to develop the technologies of the "New IPM"
- Develop a mechanism for aggregating a set of National IPM Priorities: thereby empowering the National IPM Program to communicate with "One Voice" to stakeholders and policy makers
- Improve partnerships and linkages with IPM groups
- Develop an improved process for aggregating reports and developing national IPM messaging (success stories)
- Improve definition of the roles of IPM Centers – aligned with NIPMCC priorities
- Empower programs to effectively impact all U.S. stakeholders – respect, consider and appreciate cultural, language and learning diversity
- Enhance awareness and engagement of students and youth in STEM and agricultural education – to promote development of the next generation of IPM practitioners and scientists
- Effectively engage in educating the public about food (Ag Literacy) to counter misinformation with science- based reports using media appropriate for mass audiences