

1) Dr. David E. Swayne

Action Class Assessment
A-B
Comments or Suggestions
<p>The productivity of the prior 5 years has been excellent based on publications and outputs. The scientists of NARO are top-rated and do an excellent job. My main critique is how to make a good research program better; i.e. how NARO can be the leader in east Asia in animal health research.</p> <p>1) NARO would benefit from a comprehensive national evaluation of which diseases are economically most important and those most relevant for national government control programs. Stakeholder input from the cattle, pork and poultry industry commodity associations and veterinarians could provide such information. <sup>a)</sup> <u>Then the specific diseases to target should be refocused to those diseases of highest importance to the national animal production industries and for international trade.</u></p> <p>2) There has been a large quantity of research conducted around the world on diagnostic test development and validation as well as on vaccines. Some of the proposed NARO research in these two areas has already been accomplished and published by other groups. <sup>b)</sup> <u>NARO would benefit by a concerned review to evaluate what has been done, use those developed and published technologies, and reduce duplication or reproduction of research already accomplished. NARO would benefit most by targeting research for diagnostic tests and vaccines into areas that will not duplicate past global research, but conduct studies in diagnostic tests and vaccines that are unique and provide the most benefit the Japanese animal production industries.</u></p> <p>3) NARO should look at balancing their portfolio in needed areas of basic-discovery research and those in applied-translation research of existing technologies. <sup>c)</sup> <u>An integration of the research goals and objectives with competitive grants programs and university research programs would reduce duplication, save funds and improve the outputs for Japan.</u></p> <p>4) The program needs more integration of programs around a single theme or specific agents. RP3 and RP4 are examples of appropriate projects that are focused around national priority research needs that are disease agent specific. <sup>d)</sup> <u>However, some of the projects have 3 objectives with 2 objectives meeting the central goal of the project, but they have an orphan objective tagged to the project that does not match the theme of the RP; i.e. RP12 should be focused only on vector-borne diseases and not include a pig diarrhea or pneumonia objective.</u> In general, NARO should consider separating the scientific program from the physical management aspects. Scientific program should be organized and implemented in a scientifically credible manner. The management of human and physical resources should be separate. For example, in RP12, the project is best managed as a vector-borne diseases project and objective 3 being moved to RP1 or RP2. However, the resources at Kyushu Research Station would be managed by the same director who would be accountable for human and</p>

<p>physical resource usage, but the station's project would be under 2 to 3 different scientific RP with scientific components and direction managed by NARO staff. <sup>e)</sup> <u>NARO should place itself strategically as a leader in east Asia for animal health research. This can be facilitated by increasing collaboration with other countries on similar animal health projects, especially collaborating with scientists in the emerging economy of China.</u></p>
<p align="center"><b>Response to the underlined comments</b></p>
<p>a) The NARO research program "Animal Disease Control and Prevention" is targeting the major animal diseases that are recognized to be important to Japanese economy and society including the animal industries and international trade. Each of the research plans has been established by close discussion with stakeholders and with the animal hygiene bureau of the Ministry of Agriculture, Forestry and Fisheries. The research topics on diseases and control measures to require urgent countermeasures will deal in entrusted research projects from the Ministry of Agriculture, Forestry and Fisheries.</p>
<p>b) To avoid the overlap and the repetition of research, NARO has evaluated the projects every year and reflected the results to research management. The research plans for diagnostic tests and vaccines will be evaluated at the point of suitability for animal hygiene services and veterinary services in Japan, by which diagnostic tests and vaccines should be improved and reconstructed.</p>
<p>c) Collaborative researches with universities and the private enterprises have been carried out until now. We intend to promote them from the viewpoint of effective utilization of resources.</p>
<p>d) The research program "Animal Disease Control and Prevention" contains several research projects and topics that cover basic research and applied studies to achieve the major target of the program. Some of the research projects (RPs), for example RP12 targeting subtropical diseases, will be reconstituted into suitable RPs to meet the central goal of the project by focusing on arboviral diseases.</p>
<p>e) NARO strongly supports the National Institute of Animal Health (NIAH) as the leader of animal hygiene research in East Asia including China through activities of the collaborating center OIE.</p>

## 2) Dr. David R. Smith

Action Class Assessment
A
Comments or Suggestions
<p>The research programs at NIAH have dedicated teams of staff and researchers with ambitious and comprehensive plans for solving livestock disease problems in Japan. NIAH has a long history of extremely productive research and publishing. Most NIAH programs have strategically developed plans for research based on logical assessments of disease priority. Although each of the 12 research program areas ranked high or good quality, <sup>a)</sup> <u>there may be opportunity to improve cost efficiency and provide greater effectiveness of disease control</u></p>

through cooperative strategic planning across program areas –both within NIAH and with other regulatory and research institutions (e.g. Universities). For example, many program areas plan to develop diagnostic tests and vaccines, but they don't seem to have collaborations with biosecurity and epidemiology program areas that might be useful in implementing or evaluating the usefulness of these technologies. Also, although this was a review of research programs, it would have been useful to know more about how knowledge is transferred to the end-user (e.g. how farmers and veterinarians learn how to use the knowledge generated at NIAH).

The NIAH has potential to provide research leadership throughout Asia by developing coordinated research programs with other countries on diseases of animal and public health significance.

#### Response to the underlined comments

a) Since the collaboration between research projects will be useful in applying the results to the field and in finding needs for further research, we intend to strengthen the cooperation of the RPs of the pathogens, particularly RP1 targeting viral infectious diseases and RP2 targeting bacterial and parasitic infectious diseases, with biosecurity and epidemiology. NIAH cooperates with foreign institutes as a leader of animal hygiene in East Asia through the activity of the OIE collaborating center.

### 3) Dr. Dirk Pfeiffer

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Comments or Suggestions
<p>The research conducted at NIAH is of internationally competitive standard, and has resulted in several significant contributions to the scientific knowledge base. The societal impact of NIAH's primarily publicly funded research is an important outcome measure, and this aspect was not presented in the report or at the meeting, and therefore cannot be assessed. A couple of suggestions can be made which might result in even higher scientific standard and stronger societal impact. <sup>a)</sup> <u>1. The research programmes could be restructured, in that each clusters around a particular problem, but brings in different disciplines, including microbiology, immunology, diagnostics, pathology and epidemiology. Each programme should focus on problem orientation, in the context of a clearly identified question of societal relevance. 2. Each research question/theme should be explicitly evaluated in terms of its societal impact, in addition to its scientific excellence. 3. The research work could develop a stronger outward focus in the interest of Japanese society.</u> This will mean stronger collaborations with overseas researchers, and particularly establishing NIAH as the regional center of scientific excellence. Strong links with Chinese researchers will be essential. For example, in epidemiology (as well as diagnostics) NIAH should actively seek a strategic partner relationship with the China Animal Health and Epidemiology Centre in Qingdao. <sup>b)</sup> <u>4. The expertise available in the epidemiology team at NIAH should be more widely integrated into many of the other research</u></p>

activities conducted at NIAH. Most research questions could probably benefit from epidemiological input, whether it is for the purpose of study design, data analysis, test evaluation or impact assessment. <sup>c)</sup> 5. NIAH should recognize the importance of interdisciplinary research, in particular the need to integrate social sciences including anthropology and socio-economics into epidemiological research. The reason for this is that one of the main reasons for the failing of disease control or prevention programmes is human behavior, much less often the lack of a technical tool. The need to conduct such interdisciplinary research is particularly important for Japan, since its society has specific characteristics that are quite different from those of western societies. This work would not necessarily require having this expertise at NIAH, but more likely could be conducted by having an effective collaboration with outside partners, may be at a university.

#### Response to the underlined comments

a) NARO developed the 3rd Medium-term Research Plan 2011-2015 in consultation with the Ministry of Agriculture Forestry and Fishery of Japan to strengthen every professional research domain. The individual research programs are now conducted through the cooperation of many scientists belonging to various different professions to solve the problems of high social impact. The research program is targeting the major animal diseases that are recognized to be important to Japanese economy and society including the animal industries and international trade. Furthermore NIAH cooperates with foreign institutes in order to develop their role as the leader of animal hygiene in East Asia in the capacity of the OIE collaborating center, with the intention of promoting further cooperation.

b) Since the collaboration between research projects, for example RP1 and RP2, will be useful in applying the results to the field and in finding the needs for research, further cooperation in the research projects of the pathogens with biosecurity and the epidemiology will be strengthened.

c) Since we recognize the importance of interdisciplinary research, we would like to try to introduce social sciences into epidemiological research.