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CARIBBEAN FOOD CROPS SOCIETY

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MEETING HOST:



SESSION II: INSTITUTIONAL ISSUES

PANEL DISCUSSION ON CLOSING THE INSTITUTIONAL AND TECHNICAL FRAMEWORK GAPS FOR AN EFFECTIVE CARIBBEAN INVASIVE SPECIES SURVEILLANCE AND INFORMATION PROGRAM (CISSIP)

Panel members: Dr. Carlton Davis, Dr. H. Arlington Chesney, Dr. Gene Pollard, Ms. Margaret Kalloo, Dr. Moses Kairo, Mr. Claude Vuillaume, Mr. Robert Balaam, and Dr. Timur M. Momol.

Chair: Carlton G. Davis; Rapporteur: E. A. Edwards

Dr. Carlton G. Davis. Welcome to the panel discussion on “Closing the Institutional and Technical Framework Gaps for an Effective Caribbean Invasive Species Surveillance and Information Program”. I will now introduce the panel.

First we have Dr. Moses Kairo. Moses was Regional Director of CABI stationed in Trinidad. Two years ago he took the position of Director of the Center for Biological Control, Florida A&M University, Tallahassee, Florida. We are delighted to have Moses here.

Next we have Mr. Claude Vuillaume of CIRAD, Guadeloupe, French West Indies. Claude has been with CISWG from the very beginning. Claude has been very helpful in moving toward Regional safeguarding.

Then we have Mr. Robert Balaam. Bob is the Offshore Coordinator of the APHIS Caribbean Safeguarding Initiative, and he has contributed substantially to formulating and strengthening the APHIS Initiative. He is stationed in Homestead, Florida.

Then we have our very good friend, Dr. Tim Momol. Tim is a professor of plant pathology at the University of Florida, and a Regional Director of Extension, stationed in Gainesville, Florida. Tim has a long history of doing diagnostic work, and he has been a key person in our quest for developing a Caribbean Regional Diagnostic Network, and he made a trip with us last year to the Dominican Republic to work out an agreement to start the construction of the Network.

Also we are pleased to have Dr. Gene Pollard, who served for 15 years as Senior Plant Protection Officer, FAO Sub-Regional Office for the Caribbean located in Bridgetown, Barbados. Recently Gene retired, so he is here not as an FAO representative, but in a private capacity.

Dr. Arlington Chesney was – for a number of years – Director of the Caribbean Regional Office of IICA located in San Jose, Costa Rica. Last October Dr. Chesney took the position of Executive Director of CARDI. Dr. Chesney participated in the formation of CISWG in Grenada in 2003, and he has been a key member since that time.

Last but certainly not least we have Ms. Margaret Kalloo, Deputy Program Officer for Agricultural Development, CARICOM Secretariat, Georgetown, Guyana. Margaret became involved in June 2004 when CISWG conducted a workshop in Port of Spain, Trinidad on “Facilitating Safer US-Caribbean Trade: Invasive Species Issues”, Margaret has been deeply engaged in CISWG ever since.

We have an excellent panel of experts, who will share their thoughts with us as to how we can close the institutional and technical gaps, so that we can move forward with the CISSIP project. Before we start, I thought it would be informative to have some carry-over from the last session.

Unfortunately, since we ran out of time in the last session, we did not have a discussion. However there are some very interesting “take away” points from the last session. I think it might be useful to bring those into this discussion. So, I have asked Ms. Dionne Clarke-Harris, the Rapporteur of the last session to give us a few of the take away points of the last session. But before I do that, let me recognize Dr. Gilly Evans, Rapporteur of this Panel Discussion Session. And one housekeeping item: today there will be an additional option for lunch, since the Hibiscus Court in the Lower Lobby will be open.

Ms. Dionne Clarke-Harris. Thank you Dr. Davis. Good morning everyone! I have a small nutshell of takeaway points from the first half of this session. This session is titled “Towards a Caribbean Basin Invasive Species Safeguarding Strategy Framework: From Grenada 2003 to Miami 2008”. We had a wide range of topics that set the stage for the remainder of the Symposium.

- We had presentations on the conceptualization of the collaborative mechanisms that we need for regional efforts in safeguarding.
- We had overviews and updates of some of the on-going activities that have been underway across the Region.
- Some presentations addressed capacity building and environmental protection from invasive species.
- What was clear from most of the presentations is that collaboration is indeed essential; and individual countries acting alone cannot protect themselves from invasive species; and our defense is only as strong as that of the weakest link in the whole effort.
- We talked about the Working Group, CISWG, and the Regional safeguarding strategy, CRISIS and the proposed surveillance and information sharing proposal, CISSIP.
- CRISIS has been widely endorsed, and CARICOM and various countries have agreed to participate in constructing and operating CISSIP.
- Funding is one of the main issues in launching CISSIP; so how do we move forward? Do we projectize CISSIP and ask individual organizations to each take responsibility for one component?
- Capacity building is critically important in the various countries and territories in the Region, since the chain is only as strong as its weakest link.
- Diagnostic capability is key, since you cannot prevent that which you do not recognize.
- And we also must have a mechanism for the collection and timely dissemination of information; so that when an invasive species is first encountered that all of the countries and territories are notified in a timely manner, and, thus, they can take defensive measures.

I hope this summary will suffice.

Dr. Carlton G. Davis. Thank you, Dionne. You did an excellent job. Since we have a very short period of time, we decided to ask the panelists to each take five minutes to give us their perspective on what we need to do to close the technical and institutional gaps needed to launch CISSIP. We will take the panelists in the order that they are listed in the program, and after all of them have spoken, we will open it up to the floor for discussion. So now I ask Dr. Arlington Chesney to give us his take on where we are, and where we need to go. Dr. Chesney.

Dr. Arlington Chesney. Thank you, Carlton. Since I am sitting next to Carlton, I have to behave myself. As you know, those of us who come from the Caribbean tend to lash out at

things. I will concentrate my remarks primarily on CISSIP, since that is the vehicle we identified to move forward with. When you look at it, at first you get the impression that we don't have any money for CISSIP. But when you look around you see that there is a substantial amount of work going on that relates to CISSIP. When you listen to the talks in this Symposium, you perceive that there is a substantial amount of work going on in relation to the three major areas that are defined as components of CISSIP; this includes work by USDA-APHIS, CIRAD, CABI, UFRDN-DDIS, etc. So it seems to me that if we could put together the crossword puzzle, we could then put in some pieces from the work that is on-going and from what is planned – because there is also some indication of planned work. Thus, we could then identify what is left to be done, and that would make CISSIP a more manageable prospect for potential donors as we move forward.

I noted, also, particularly from the CIRAD presentation –which, unfortunately, I could not hear in its entirety because of a phone call - there are networks already established in the Region. How can we use those networks and their information to further this work against invasives; how do we link that into CISSIP? This afternoon, we will have a discussion on PROCICARIBE; how can these networks and the vast amount of information be linked into PROCICARIBE for the benefit of the wider Caribbean?

Then, what came up here – Joan mentioned it – that we need to collaborate, but I did not get the impression that there is much sharing of information. I am a layman in this area. But some of the information I heard today was new to me, and none of my people in CARDI have mentioned it to me. So it seems to me that there needs to be some central hub through which information is passed and disseminated. There are two mechanisms: you could either send it to the hub, which in turn would disseminate it through the spokes, or you circulate it around the whole periphery of the wheel. The chairman of the Working Group, Bruce Lauckner of CARDI, is not here, but maybe this is a role that the Chairman of CISWG may wish to take on. And in that context we could also develop a better information system to assist us in moving forward. In summary, therefore, Mr. Chairman, I am more optimistic about the success of CISSIP after the previous session than I was before that Session. We have tried to find funding for the whole of CISSIP, but it was too big a bite for any one funding agency to swallow. So, I think we need to divide CISSIP into manageable pieces, and assign each piece to a certain lead organization. In that way we would be able to move forward. Thank you.

Dr. Carlton Davis. Thank you, Che, for those insightful comments. I now ask Dr. Gene Pollard to give us his thoughts.

Dr. Gene Pollard. Good morning to all! Thank you, Carlton. First I wish to thank the organizers for inviting me here in my own capacity. As mentioned before, I recently retired from the Food and Agriculture Organization of the United Nations after 15 years of service, and at the moment I am trying to enjoy my first weeks of retirement, but I do not think this is the best way to be doing it. Nonetheless, I am quite pleased to be here. And I should say that anything that I might say in the next few minutes will probably be influenced by the time I have spent with the Food and Agriculture Organization, since. I have not yet established an identity outside of that Organization in terms of what I might say. We do have some serious institutional and technical framework gaps that detract from constructing a system of Regional safeguarding or CISSIP.

Looking at the institutional framework gaps, FAO has in the past identified several constraints to international policy in regulatory frameworks for biosecurity in food and agriculture. And according to that organization, the international policy – I am just quoting from one of FAO’s strategy papers: “the international policy and regulatory framework is disjointed and incomplete and further in international programs of biosecurity there is a need to develop common methodologies particularly for risk analysis, international standard setting including environmentally related standards and integrated management and monitoring”. I think if we use this as a starting point for CISSIP and for other work we need to do..... The message here is that we need to have more collaboration. As Dr. Chesney just indicated much of the information he has learned here today is all quite new to him – what I think he meant that is that the information is still within the confines of the particular researcher or the research agency; and if CISSIP is to really function as a Regional Mechanism and Regional Program, then CISSIP needs to have a way of gathering all that we have been doing over the last few years and to make this information readily available to all of the stakeholders in this room. And there is a need to extend international policies, arrangements, and assessments to corresponding national policies and arrangements. I believe that yesterday someone in one of the presentations mentioned that there are too many different agencies within a given country dealing with various aspects of the problem of invasive species management, so that it is not possible even within each individual country to bring together common coherent programs or one integrated program to manage invasive species.

In terms of technical gaps, again, these have been identified over and over. We have inadequate resources as it relates to human, technical, financial or physical. Earlier today Margaret Kalloo talked about the financial shortfalls, and the need to continue to pursue support with the donors for the programs identified under CISSIP. As Dr. Chesney said, we need to, perhaps, break CISSIP into smaller units. So we really need to think of different project types within the CISSIP program, so that various donor agencies can feel more comfortable in funding an aspect of CISSIP.

With respect to needed physical resources, these are largely national activities; for example, the lack of diagnostic capabilities within countries, and the need for countries to get their laboratories up to scratch. And I believe that the CARICOM Secretariat has been pursuing a project to assist in laboratory strengthening in the Region. In fact, just before I retired from FAO, I had developed two project proposals where countries in the eastern Caribbean were eligible for EU funding within the SFA – the Strategic Framework Agreement, which is the mechanism that has replaced Lome funding. And countries have agreed to allow FAO to develop and implement these projects with EU funding. These two countries, St. Vincent and St. Lucia, have had projects approved, which - in part - are for the strengthening of plant protection and plant quarantine laboratories. So there are some initiatives in the Region to assist with laboratory strengthening.

The other resource constraint, inadequate human resources – that we have heard about over and over. There is a real shortage of trained personnel within Caribbean countries. Such personnel are needed to carry out Phytosanitary responsibilities within Central America and the Caribbean, and CISSIP calls for some training. And we heard of USDA-APHIS training programs not just in the Caribbean but, also, in Central America. Also we are aware of CIRAD training programs. In

addition, the University of Florida and the University of Puerto Rico have initiated some distance diagnostic training in relation to construction of the Caribbean Regional Diagnostic Network.

Now, let me emphasize that from a Regional safeguarding perspective, there has to be much greater collaboration.

It is also vitally important that at the national level countries must take much greater responsibility to develop their human resources, and to develop their physical and laboratory infrastructure to provide for better diagnostic capabilities. The fact is that in dealing with invasive species, you have to be able to identify and recognize what is coming in and prior to that what you already have; so that you know something is an invasive. If you don't know what organisms you already have in your country, you cannot really say what is new; so the diagnostic capabilities are critical, as has been identified in the CISSIP program. And I certainly hope that at the country level – the national level – decisive efforts will be made to develop this capability even without the funding coming from something like CISSIP. Thank you!

Dr. Carlton Davis. Thank you, Gene. We really appreciate your thoughts and your willingness to come out of retirement so soon, after having served FAO so diligently for 15 years. We really appreciate the fact that you have come to participate. Thank you very much for coming! Now I will call on Ms. Margaret Kalloo to express her thoughts.

Ms. Margaret Kalloo. Thank you Professor Davis. Good morning, again! With respect to closing the institutional and technical framework gaps for making CISSIP effective, where are we? We started off this process with several partners working with a degree of coherence in how to deal with invasive species. We still have those same several partners, but now many other people and institutions outside that initial group are willing to come in and assist. And therefore, in thinking of institutions, the original CISWG members need to sit together and to think very coherently to identify who are those other strategic partners that we need to enlist, so as to widen – if not deepen the institutions working together in safeguarding against invasive species or the threat of invasives. Whether these are international agencies that we did not consider sufficiently initially and whether these are national agencies that we did not consider before, we need now to sit and to consider with the perspective of gaining strength as to how to narrow the gaps, and of how to move forward with CISWG, the CISSIP Project and the Pathway Analysis that has started concurrently in this process. It has evolved, and it has not really been directed because things were moving at a really fast pace, and we were under pressure from the Ministers of Agriculture within CARICOM, and within the universities, also. We had a lot of pressure to get things going, but now is the time for reflection, and we need to step back and really think coherently as to how we move forward. So in terms of institutions we may want to consider that.

With respect to the technical gaps, that is another aspect that we need to look at. Within CISSIP the participating countries, and I speak now for the CARICOM countries in terms of their infrastructure, we need – as a Community - to pull together and start working, not independently, but working as a group and to improve those systems that we can for ourselves without the assistance of the CISSIP Project, but rather to provide that platform from which CISSIP can take off.

So in that context CARICOM and CARICOM countries have moved forward this year and last year in terms of trying to strengthen ourselves. We convened the Plant Health Directors within the CARICOM countries and within the wider Caribbean, as we heard from the APHIS presentation this morning. It is a wide body and a wide group of technical people as well as policy people. Never mind that we deal both with policy and technical issues because we come from countries whose resources are constrained. As policy people in CARICOM, we multitask and try to get things going, and we deal with technical issues and budgets and so forth, but those are the realities that those of us in resource challenged countries have to deal with. So the Plant Health Directors Group is really a group that has been formed to help advise on policy issues and on the technical issues that are related to all invasive species, so that is a plus for us. And we did this with the assistance of the participating Regional and International organizations initially with the leadership of APHIS.

We need to continue that and we need to strengthen that because it is a policy group and it has technical groups, too on all these invasive species that have importance to CARICOM and to the wider Caribbean starting with Cuba and running to Suriname. I have no authority to speak on the Latin American countries in the wider Caribbean such as Venezuela, Paraguay, and so as you move up the coast. So we need to recognize that group as the group that can define policies to a large extent within CARICOM. For us in CARICOM that is important because we need that structure so that we can have coherence in policies that we want our Ministers to adopt and to construct a Regional framework for us to work within. So we are looking at that.

But when we look at the institutions that we have in the CISSIP Project, and we recognize that CARDI has chaired this as we set up this whole thing. And I know that most of you here are plant people, but we need to ensure that we need to keep them on board – not only on the animal health side but also on the plant health side. We need to keep CIRAD involved within the framework of the CISSIP Project; recognizing the work we have been doing. This CISSIP Project is the product of all of us. We need to strengthen these ties. The organization - even that of CISSP - needs strengthening.

And there is one more thing that I wanted to say: the institutions and the organizations working within CARICOM and within the wider Caribbean, we need to sit together and strategize as to how we can really work the CISSIP Project to the benefit of all of us. At these workshops and symposia dealing with invasive species, we have never sat down and figured out how we can factor these programs into a regional safeguarding - and that needs strengthening.

With respect to labs, the CARICOM Community has been working together to strengthen the laboratory infrastructure in the Region; and this, also, is in support of moving CISSIP forward. That Project is coming on board this year, as we strategize as to how we can use laboratories across the Region, given that we do not have all that we need to have and that some countries have more than others. So we need to find a way to make use of those laboratories to the benefit of the whole Community.

And the last point that I need to make is where we are closing some technical gaps, and that is important. The CARICOM member states at this point in time - at least 13 of them - have what they can afford. Agricultural health and food safety can be a committee, it can be a group that

has been sanctioned by the governments and focuses on plant health, animal health and food safety. So we are making progress, and we have benefited from the framework of the CISSIP Project. Chair, with that I conclude my comments.

Dr. Carlton Davis. Thank you Margaret for giving us your thoughts. Since our time is very short, I will now call on Dr. Moses Kairo to give us his perspective. Moses.

Dr. Moses Kairo. I think a lot of the key issues have been covered by preceding speakers. But I want to step back a bit. With regard to CISSIP we are really talking about surveillance and information as two key components as opposed to actions for actually dealing with invasive species. And in looking at institutional gaps, it is a fact that Ministries of Agriculture generally have been the key Ministries with the capacity to do things and take the leading role in dealing with invasive species. However as issues of invasive species have come to the fore, and as countries have had to begin meeting obligations under various relevant international instruments, the fact that invasive species are a greater issue has also come to the fore.

And I think countries now are being challenged on the one hand of pulling together all the different entities within each country that deal with invasive species, but also of pulling together the resources needed for the greater good. So I see that an important issue is the need for greater coordination starting from within each country – bringing all the different entities, private sector entities, non-governmental organization entities, creating mechanisms wider than the grass roots level that actually ensure that resources are really being maximized. Because the goal is so different, players who have a role are very busy and they are spending a lot of resources, but really not producing much in terms of outputs that we can actually measure. So I think that [production of outputs] may be just starting there.

This group, for example, has formed a kind of linkage with regards to plant protection. But we also need to involve also players from environmental studies - at least more of the people whose devotion is largely to the environment. They have a lot of interest in invasive species, and they actually depend on agricultural people where the capacity for safeguarding resides. So I see areas of synergy there.

Also I want to talk about the issue of taxonomy and diagnostics. It is a fundamental and critical component of safeguarding and, hence, of CISSIP. And ultimately I see a big persistent challenge that goes beyond the immediate needs of CISSIP. Given the declining capacities of small economies to support fundamental science and especially their declining capacities in taxonomy, diagnostics is going to remain a big challenge in the Caribbean. And this is something that needs to be overcome.

The last point that I wish to talk about is training – not just at the diagnostic level, but at a broader level, such as graduate training in biology that appeals not just to people in agriculture or other applied fields, but, also, to people generally who are interested in conservation. We really do need to encourage more people to come into the field of conservation. Thank you.

Dr. Carlton Davis. Thank you very much, Moses. We very much appreciate the points you have made. Now I ask Mr. Claude Vuillaume of CIRAD to relate his thoughts. Claude has been with us from the very beginning, and he has been very helpful to our effort in many ways.

Mr. Claude Vuillaume. Thank you, I would like to briefly present some thoughts and perspectives on CRISIS, CISWG and CISSIP – how can we move forward. Thus the Ministry of Agriculture, IRD (Institut de recherche pour le développement), INRA and CIRAD are all engaged together in fighting against invasive species. So we have an interest in CISSIP and to collaborate with you, and mainly, I think, along a line similar to CaribVET and considering the successful first meeting of the Region’s plant health directors it may be important to develop CISSIP and CaribVET in parallel.

And this afternoon we will have a meeting of PROCICARIBE and, also, with a representative of CACHE. We will discuss how it is possible to organize a meeting of a special working group to discuss research priorities, and I am sure that one of these priorities will be invasive species. With respect to funds, we have to make do with what we have. In CIRAD we have resources from the Government of France – the Regional Cooperation Fund - to create some networks with Caribbean countries. But we also have some new funds, Inter-Island Cooperation Fund. Thus my colleagues and I are now considering ways to put forward a cooperative project involving the Eastern Caribbean States on Black Sigatoka.

Now with the EU and with the World Bank – if you want to present a project - it is necessary to create a consortium to obtain support to develop a surveillance system on invasive species. A consortium is a very powerful mechanism for obtaining grants from such bodies. I think that would be very important to do this. So once again, this afternoon we will meet with PROCICARIBE and CACHE to see if it is possible to organize a special working group. One of the first tasks would be to organize a surveillance and information system at the general level and especially for invasive species. Thank you!

Dr. Carlton Davis. Thank you, Claude, we really appreciate your comments. I now call on Bob Balaam to give us his thoughts.

Mr. Robert J. Balaam. In preparing for this panel discussion, I contacted Carlton and I asked specifically what I should talk about? So we discussed various ideas. Finally Carlton offered: “Bob, it’s not just what you say but how you say it.” So with that guidance, Carlton, I prepared some brief specific remarks that I will read, so that I don’t get myself in trouble.

There is a multiplicity of institutional and philosophical differences between and among countries in the Greater Caribbean Region. The Region is composed of Dutch-, English-, French- and Spanish- speaking nations. The Region is represented by numerous research, regulatory and trade institutions or agencies. Each has its own constituency, philosophy and strategy on how to reposition agriculture in the Region. However, there is one common theme or thread that binds us all together, and that is invasive species.

If left unaddressed, invasive species will significantly impact the Region’s economic strength, the safety of the food supply, the ability to sustain food production and the ability of each of our nation to effectively trade agricultural products across its borders in a safe and efficient manner.

The institutions and the agencies within the Region need to work together effectively to safeguard agriculture, natural resources and human health from the impacts of invasive species.

The Caribbean Regional Invasive Species Intervention Strategy, or CRISIS, has defined the overall framework by which this can be accomplished. The Caribbean Invasive Species Surveillance and Information Program, or CISSIP, has defined the first steps in addressing such specific actions of CRISIS.

APHIS is currently assisting the Caribbean Invasive Species Working Group, CISWG, with the Caribbean Pathway Analysis, which will evaluate pathways for exotic plant pest movement into, within and out of the Region. I think that most of us already recognize that due to the volume of commodities and passengers involved, fruits and vegetables and propagative materials from Central America pose a potential pathway, the tourism industries of the islands of the West Indies are a potential source of pest movement by air and sea passengers, and cut flowers from several South American countries, such as Colombia and Ecuador also present potentials for pest movement across international borders.

Movement of commodities and the pests and diseases that they may harbor can affect our Region's food supply, our food and other agricultural production, our natural resources sustainability, and our ability to trade effectively within the world marketplace.

CISSIP as you know contains three main components: (1) an on the ground pest detection and surveillance program, (2) a web-based digital diagnostic system and (3) a web-based information sharing system. There are other components, but to me, these are the 3 primary technical ingredients. Without the dedication of resources by each individual country to some pest and disease detection and surveillance efforts, the other two main components - the diagnostic system and information sharing - will not be fully effective. We must first look for and find new pests, so that we can respond quickly and effectively to contain, eradicate, control, or manage these organisms before they have the ability to spread throughout our country or throughout the Region.

We must develop pest surveillance activities against pests of limited distribution within the Region, so that we can report the status of quarantinable pests to our trading partners, and thereby lessen the negative impacts of trade where possible.

The budget for implementation of CISSIP is huge, and is not likely to be fully fundable from outside sources in the near future. Therefore, each country in the region needs to make a commitment to begin funding some of these activities on its own. As CRISIS states, no individual country by itself can negate the impacts of invasive species on our Region. We must, each, bear some responsibility for this effort.

We can no longer say that funding for tourism is more important, that economic development is more important, or that health and human safety are more important than controlling invasive species. Invasive species can impact all of these social and economic issues. If we fail to quickly detect new introductions of harmful new invasive species and if we fail to quickly and effectively respond by mitigating those introductions, then we are opening the door to negatively

impacting tourism, agricultural production, maintenance of a safe and abundant food supply and maintenance of an effective and prosperous trade policy with our trading partners.

The impacts of invasive species can be felt throughout all of our way of life that we currently recognize as important. We cannot continue to wait for someone else to fund our needs. The near term economic future is not bright, and the failure to use our existing resources will only put us further behind in preventing negative impacts of encroaching invasive species.

One step the each one of us should consider as part of our cooperative effort is to re-evaluate our funding priorities, and dedicate at least one person to early pest detection and surveillance within our sphere of influence.

Whether we are a regulatory agency, or a research institution, or an entity involved in the production of food or other agricultural commodities, each of us can bring some small component to the overall goals of CISSIP without waiting for external funding - which may not soon come. The networking and information sharing will soon follow, but first we need to establish a surveillance program for detecting invasive species. As someone else has already said, we should look to the Caribbean Plant Health Directors as a reliable group to make pest surveillance happen because they already have the infrastructure. Thank you.

Dr. Carlton Davis. Thank you, Bob. I just want to let you know that we folks in the Caribbean do not run away from the truth; so it does not offend us. No last but not least, I call on an old friend, Dr. Tim Momol for his comments, Tim.

Dr. Tim Momol. Thank you. I wish to thank Carlton, Waldy and Bill Brown for inviting me. Carlton, told me that I have 15 minutes, so I have prepared a Power Point presentation. I am just kidding you; I will take just five minutes. I will cover mainly the technical part of the CRDN component of CISSIP. This figure is just a reminder, \$120 billion dollars, the annual cost to the US of losses caused by harmful invasive species; and this estimate according to colleagues at Cornell University.

Invasive species are not only invasive plants, but also insects, plant pathogens and other organisms. They are a real threat to agriculture and natural resources, and they impact food safety, crop biosecurity and international trade. We emphasize prevention, but it is unlikely that we will ever be able to prevent all introductions of invasive species. Nevertheless, with effective detection and diagnostic networks, we can contain or eradicate invasive species, once they have been introduced.

Detection and diagnostic networks are essential for rapid and effective response. This slide shows the different components of an effective diagnostic network. The brain of the network in terms of data management is the clinic information management system for the diagnostic network. But the main activity is – as you see – in the diagnostic clinic labs in meeting the pest identification needs to cope with problems in in the fields of farmers. This portion is an expansion of the system and, of course, in some special cases, unknowns - new diseases and new insects – are encountered. In these instances the expert lab plays a very important role.

The clinic information management system allows the expert to be located anywhere in the world with access to the internet – provided that the expert is supplied with high quality images of the pathogen or pest. Of course, when regulatory issues are involved, then such highly sensitive and important information will immediately be shared with the country's pest regulatory agency for guidance on how to proceed. Basically the rest of the system is a decision-support tool for pest regulatory organizations.

It is very important to enhance laboratory capacities and capabilities. It is important that networks are coordinated through standard operating procedures, communication protocols, and certification of labs. It is desirable to have all of the labs use the same basic set of protocols.

Regular training of personnel is very important, since we cannot achieve high quality performance without regular training. Expert laboratories play a vital role in such training and in the identification of new invasive species.

The DDIS has been proposed for use as the clinic information management system. It is a cohesive and distributed diagnostic system. It serves a database, and provides secure web-based communication, and maps pest distributions.

I emphasize the importance of secure internet communication. In the Caribbean several valuable databases have been constructed, but some of them are open, and in times of crisis, network security is very important. DDIS is a collaborative basic diagnostic tool, and it has many valuable features which you can see at the UF/IFAS DDIS website: <http://ddis.ifas.ufl.edu>.

We will have a poster display on distance diagnostics this afternoon at 5 PM, so please visit the UF/IFAS booth.

If you already have a well-equipped and well-provisioned diagnostics laboratory, then you will not need anything more to connect to the network. However, it is very important for each country to develop a strong extension system. Unfortunately, as we learned yesterday, the extension systems in a number of countries in the Caribbean have been dismantled. Without an effective extension system, it is not easy to develop networks to find, to detect, and to diagnose.

Policies and protocols on data confidentiality are very important. Building trust with partners and the public requires consistent behavior over a long period of time, but it is extremely important.

CISSIP cannot be widely implemented without major funding. Of course, there are different ways and different methods to accomplish this. CISSIP needs to be strongly supported and championed within the heart of the Caribbean Region, so that its implementation can be advanced. CISSIP offers many opportunities for partnerships in research, extension and in teaching. Tomorrow, Carrie Harmon will make a presentation about diagnostic networks, some of them international in the Crop Protection and IPM Section. Thank you for your attention.