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BUYUNG HADI SELECTED AS IAPPS FAO REPRESENTATIVE

The Executive Committee of the Governing Board of IAPPS is pleased to announce the appointment of Dr. Buyung Hadi as The Food and Agricultural Organization (FAO) Representative. Buyung, an IRRI entomologist, has been serving until very recently as IAPPS Region XI: South East Asia Coordinator (IAPPS Newsletter June 2019). He has been leader of the USAID/VA Tech IPM Innovation Lab project, "Development of Ecologically-based Participatory IPM Package for Rice in Cambodia (EPIC)" since 2016 and was recently appointed as Director of the IRRI Cambodia office with leadership for the "Sustainable Impact Platform Project". In March, 2020, Buyung was appointed as Agricultural Officer (IPM); AGPMC (Pest and Pesticide Management), Plant Production and Protection Division, Food and Agriculture Organization of the United Nations, Rome, Italy.

Dr. Hadi is the first FAO Representative on the IAPPS Governing Board, a new position created by the IAPPS Executive Committee. IAPPS wishes to continue to avail of his global experience and pest management expertise in the delivery of crop protection technology to small-holder farmers via his role as FAO Agricultural Officer (IPM). Buyung's role as IAPPS FAO Representative will be of mutual benefit to IAPPS and FAO as both organizations have similar objectives: that of promoting global food security via the development and transfer of sustainable pest management practices.

On behalf of the IAPPS Executive Committee, Regional Coordinators and the global IAPPS membership I am pleased to welcome Dr. Buyung Hadi as the IAPPS FAO Representative.

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IAPPS HELPS PREPARE COCONUT RHINOCEROS BEETLE EMERGENCY WORKERS FOR A POST COVID-19 WORLD

The effects of COVID-19 are being felt as far away as the remote Pacific islands where governments have shut down travel and transport to prevent arrival of the virus. Unfortunately, this is not the only problem the island states are facing. Increasing storms and sea level rise, are a consequence of climate change. Invasive pests, like the coconut rhinoceros beetle (CRB) (*Oryctes rhinoceros*), are highly damaging on vulnerable islands.

In recent years, fortunately, IAPPS has provided a focus for scientists working on CRB to raise awareness of the problem and develop solutions. Symposia and papers bringing scientists together to discuss the problems of Pacific pests and CRB were presented at the IPPC 2011 (Hawaii), IPPC 2015 (Berlin) and IPPC 2019 (Hyderabad) (See report below) and a call for an emergency response to the invasive CRB-G was published in the IAPPS newsletter 77C (2015).
The IAPPS activities contributed to formation of a CRB-G Action Group of scientists from the affected countries and international institutes with the aim of addressing the urgent problem of invasion of the Pacific islands by a new biotype of the rhinoceros beetle (CRB-G). The insect is causing heavy damage to coconut and oil palms and is a threat to economic and food security. A side meeting of the CRB Action Group at IPPC Hyderabad was able to confirm the network of scientists and suggest collaborative activities to prevent spread and control the invasive insect. Emergence of COVID-19 has squashed many of the plans for personal interaction through travel to the affected sites, but the established network means that information and samples can still be shared via the internet and courier transport systems. Recent information shows how CRB-G is spreading through the region in the absence of adequate control measures and severe damage is caused once populations establish. Despite the inability to travel, training materials can be distributed and mentoring can take place for network members over the internet. A response to CRB-G, involving awareness, containment through clean-up of potential breeding sites and the search for new effective biocontrol agents is being supported with funding from MFAT (New Zealand), DFAT (Australia) and other donors.

Members of CRB-G Action Group in field assessment, West New Britain, Papua New Guinea.

A symposium titled: '**The challenge of coconut rhinoceros beetle (*Oryctes rhinoceros*) to palm production and prospects for control in a changing world'** was organized by Trevor Jackson and Sean Marshall at IPPC 2019, Hyderabad, India. The symposium report is given below:
The coconut rhinoceros beetle (CRB) (*Oryctes rhinoceros*) is a major pest of coconut and oil palms throughout Asia and islands in the Pacific and Indian Oceans and the symposium at IPPC was timely. The role of palm products in underpinning food security and economic viability of tropical communities is increasingly recognized, but attack by CRB threatens viability of established plantations and new industries such as virgin coconut oil and coconut water. In the Symposium, Sean Marshall (AgResearch New Zealand) explained that a new biotype (GRB-G) is of particular concern as it is highly damaging and appears to be resistant or tolerant to the biocontrol strains of the *Oryctes* nudivirus (OrNV). Dr Geoff Bedford (Macquarie University, Australia) provided a historical perspective of the success of the original introduction of OrNV and provided some pointers for new investigations. Methods of incorporating biological control into IPM were explained by Dr Mohd Mazmira (MPOB, Malaysia) based on the successful management of CRB in Malaysian oil palm plantations. Mark Ero (PNGOPRA, PNG) described

the situation in Papua New Guinea where earlier introductions of the pest have been controlled by IPM but the country is now challenged by CRB-G. The devastating impact of CRB-G on the island of Guam was described by Aubrey Moore (Univ. Guam) where the insect escaped control efforts after palms were felled by Typhoon Dolphin in 2015 leaving an abundance of breeding sites. The complex situation in Palau was described by Chris Kitalong (Palau Community College) where a long-established presence of CRB occurs together with CRB-G and virus infection is reported in the beetles. The situation in India, where young palms seem most vulnerable to attack, was explained by Sajan Jilu in a paper showing how botanical paste and cake can be used to effectively protect the palms. Trevor Jackson (AgResearch, New Zealand) explained how the spread of CRB-G in the Pacific and the voracious nature of its attack led to researchers forming a CRB-G Action Network which is working to contain and control the pest. The symposium provided a unique opportunity for researchers to come together and build collaborations to meet the threat of CRB to palm grower regions of the world. The symposium was supplemented by a workshop where symposium participants shared experiences with Indian colleagues and established contacts for future partnerships.

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BIOLOGICAL CONTROL AND IPM PROGRAMS IN PANAMA: CHALLENGES AND PROJECTIONS

Since the last twenty years, biological control of insect-pests has been strengthened through synergy between national and international research groups, which enabled important products to be achieved through government financial resources. Some special considerations, which consider Panama to be a geographical transition zone, which is based on agroclimatic differences found in economically important crop production areas, mainly in rice and vegetable cultivation. The characterization of these agroecological zones is confirmed by the high temperatures (30–34^{o}C), which have little annual variation. Where climatic seasons are determined by the variation of rainfall, establishing the dry season and rainy season. The above condition indicates the adaptation of natural enemies, which ensures the success of augmentative biological control programs. Therefore, the importation of natural enemies is not considered the best option for the management of alvo pests, in crops of economic interest. Important advances have been presented using the weed complex on the outer edge of rice-producing areas, such as egg parasitoid hosting plants, mainly *Telenomus podisi,* suggesting the plasticity and adaptation of the genus *Oebalus* and mainly *Oebalus insularis,* to plant species of different taxonomic plant families. The results presented have allowed to incorporate into the rice management program, the biological conservation control, the impact of which is observed between the harvesting and planting season of the crop. Augmentative biological control is also being considered for the management of *Spodoptera frugiperda* and *O. insularis,* considered key pests in rice cultivation. Therefore, the mass-rearing of *Trichogramma pretiosum* and *Telenomus podisi* has been successfully implemented, and terrestrial releases were subsequently performed in experimental areas with high populations of *S. frugiperda* and *O. insularis.* The reduction rates of both pests ranged from 79.0 to 84.0%, confirming the technical rigor of the multiplication system and quality control of parasitoids, bred under controlled abiotic conditions. The key insect pests of vegetables (mainly

tomato, paprika and some cucurbitaceae) have been managed through conservative biological control, promoting the increase of the predator population, mainly *Orius insidiosus* specifically for *Thrips palmi.* However, there is also evidence that the application of strains of *Metarhizium anisopliae* and *Beauveria bassiana,* can reduce the population of *Hypothenemus hampei* attacking coffee.

Despite the results achieved, the main challenges remain; the transfer and adoption of this technology, coupled with the process of constant innovation such as the conservation of natural enemies through the use of selective insecticides, the evaluation of methods of release of egg parasitoids and the effective application of entomopathogen fungi. Other challenges relevant to tropical agricultural ecosystems from which Panama does not escape, is the invasion and adaptation of invasive pest species, often requiring the combination of classical biological control with other management methods.

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IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described in the IAPPS Web Site www.plantprotection.org.

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