SPECIAL EDITORIAL

Founders of the Asian-Pacific Weed Science Society – An Appreciation

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Abstract

The APWSS, born on 22 June 1967, is now 52 years old. It is now taking a major step forward by publishing a dedicated, weed science journal - *Weeds*. In this Special Editorial for the journal's inaugural issue, I am privileged to have the opportunity to reflect on the landmark events, which preceded the Society's birth. We were not born by accident; momentous events within the discipline of Weed Science, and related fields, shaped our birth. It is appropriate, in this first issue of the new journal to acknowledge our Society's gratitude to the three founding fathers. While providing my own views on some important challenges ahead, I recall the essence of what our founding fathers achieved, so the readers might be inspired. We stand tall today because of their vision and commitment, over five decades ago. In 2017, celebrating 50 years of existence as a professional society, we recorded the society's achievements and contributions to Weed Science and the broad spirit in which they were achieved. Applying Weed Science across the Asian-Pacific and possibly, other tropical regions, must continue to be our goal, while continuing to take up new challenges. This will require APWSS to engage more broadly with similar global movements, by networking to share knowledge and experiences to inspire the current and next generation of weed scientists. Given there is little consistency in the way we deal with weeds in the different member countries, developing a common agenda to educate and influence national policies must be a priority for the APWSS in the 21st Century.

Keywords: Asian-Pacific Weed Science Society, Donald L. Plucknett, William R. Furtick, Roman R. Romanowski Jr.

'It All began in a Kitchen'

In a letter to the Asian-Pacific Weed Science Society, on its 40th Anniversary in 2006, one of our founding fathers - Dr. Donald Plucknett, explained that: "...*It all began in a kitchen at the East Kauai Methodist Church*…" His fascinating account leaves little to imagination. It describes our birth as follows:

> *"…The history of the Asian-Pacific Weed Science Society began with the first "Asian-Pacific Weed Control Interchange". The story of its beginnings is an interesting story, involving a number of persons who came together to make it all possible. In 1966, the University of Hawaii and Oregon State University began a new collaborative program to screen new herbicides under sub-tropical conditions in Hawaii. These experiments were linked with similar experiments in Oregon and Chile (an ecological analogue of Oregon). Professor Bill Furtick of Oregon State had pioneered these experiments that demonstrated the efficacy of linked international experiments and international collaboration in weed science. Sometime in 1965 or 1966 Dr. Furtick had met Dr. Roman R. Romanowski, Jr., Assistant Professor of Horticulture at the University of Hawaii, and they began to plan how they could collaborate in weed research. On his return to Hawaii, Dr. Romanowski contacted me regarding possible holding of the annual herbicide trials at the KBS.*

I quickly agreed, and Roman and I brought the matter to the administrators of the UH College of Tropical Agriculture who readily approved. Thus, began a very fruitful and fulfilling collaborative arrangement between OSU and the UH Departments of Horticulture and Agronomy and Soil Science. Every year, when the trials were being conducted, Bill Furtick, Roman Romanowski and I spent a lot of time together, working and talking about how weed science might be expanded even further and strengthened to meet the challenges..."

"…In January, 1967, we (Bill, Roman and I) were relaxing a bit on Kauai after completing work on the annual OSU-UH Herbicide Screening Trials at KBS. We decided to go apart from the crowd for a while and just brainstorm what could and should be done in weed science in the Asia and Pacific region. To be alone, we went to the East Kauai Methodist Church and used the kitchen as a meeting place. In the discussions which followed, we decided that what we would really like to do was to get a small group of knowledgeable persons - researchers, extension workers, industry scientists - somewhere in a key location (Fiji was one suggestion) to answer some of the following questions: (I) who are the weed workers in the Asian-Pacific area; (2) what are the major weeds and weed problems; (3) what are the research and development needs of the various countries; (4) what linkages are necessary or possible in dealing with the perceived needs?

Funding for this became a readily apparent need. We decided to approach East West Center to ascertain their interest. We made an appointment with Y. Baron Goto, Vice Chancellor of the East West Initiative for Technical Interchange. In our meeting with Baron we outlined what we hoped to accomplish and what we thought could be done to achieve this. Baron surprised us by readily agreeing that something should be done. He said something like this: 1) there should be such a meeting, 2) it should be larger than we asked for and should survey the Asian Pacific area, 3) it should be held in Hawaii, 4) the EWC-ITI would co-sponsor it with the College of Tropical Agriculture, 5) Horace Clay would act as his staff representative in planning it, and 6) he would ask us to begin to develop plans.

Later that evening, when Roman and I were seeing Bill off at the plane, we were enthusiastically searching for a theme for the meeting. We worked it out: "Weed Control Basic to Agriculture Development". Many steps followed. Baron sent Roman to Asia to seek out possible participants and to identify key participants. Roman and I asked Congressman Sparky Matsunaga to be our keynote speaker (he readily agreed). We decided to have 2 locations for the meeting; one week in Honolulu followed by another week in Kauai. Kauai was selected as the site for several field demonstrations and field trips..."

The meeting was a real joy. Many weed workers who had been toiling in isolation for the first time met other persons with similar interests. Surveys of important weeds of crops, of trained workers, and of existing weed science programs, etc. were conducted. The Proceedings was edited by Roman Romanowski, Don Plucknett and Horace Clay. Several chemical companies helped the University of Hawaii College of Tropical Agriculture and the East-West Center Institute to support its publication. On the last day of the Interchange, at the Prince Kuhio Hotel near Poipu on the island of Kauai, the Asian-Pacific Weed Science Society was proposed and organized. We met in a large tent on the lawn overlooking the blue Pacific. Here, the first officers were elected and given a mandate by the members to proceed with the development of what has become a major regional (and truly international) Weed Science Society.

We have been so fortunate to have good support from many sources, first of all the East-West Center which backed us and got us started and the companies have always been supportive and helpful. And we have had outstanding leadership from an energized, committed membership and individuals who caught the vision and built well beyond what Roman, Bill and I could have envisioned in that tiny little rural church kitchen in Kauai..."

(Donald Plucknett, Honolulu, Hawaii, Dec 2006)

Thus, Began Our Journey

As Don Plucknett's letter explained, the Society came into being following an "*Asian-Pacific Weed Control Interchange*", held during 12-22 June 1967 at the

East-West Center, University of Hawaii, in Hawaii. A group of 87 individuals, from 22 countries, participated at the inception meeting under the theme: "*Weed Control - Basic to Agriculture Development*".

On the last day, a Workshop recommended the formation of an organization: "…*to facilitate the interchange of current weed control information and promote research in Weed Science...*" A news release on 3 July 1967 by the East-West Center, after the first Conference stated: "*the Society will seek to stimulate research into how extensively weeds limit food production in the tropics, giving major attention to rice in Asia and to coconuts in the Pacific* ". The desired outcomes were to identify: (a) the weed workers in the Asian- Pacific region; (b) the major weeds and weed problems of the region; (c) the research and development needs of various countries in the region, and (d) the linkages necessary or possible in dealing with the perceived needs.

The credit for creating a professional society to help deal with the issue of weeds in the Asian-Pacific region must go to these three founding fathers – Bill Furtick, Donald Plucknett and Roman Romanowski Jr. and this first issue of the APWSS journal is an opportunity to honour their vision, enthusiasm and hard work. They deliberately encouraged scientific research on weed control, in the 'tropics', with most attention to rice and coconuts because weeds were roughly estimated to 'stifle' as much as 40% of production of these crops (APWSS, 1977). The primary motivations for founding the APWSS were further clarified by Bill Furtick at the Second APWSS Conference, in the Philippines, in 1969.

> *"…Weed Science suffers because weeds have been an integral part of agriculture from the beginning and their damage is less dramatic than that caused by insects and diseases. However, it is apparent that weed control is a pre-requisite for the development of modern agriculture, which is based on developing high yielding, high quality varieties that can produce their potential only under optimum fertility, water and freedom from pests. This means that without weed control, modern agriculture will end up under a canopy of weeds. It is the duty of the weed societies to get this story across to others in agriculture. It has often been possible for the representatives of industry to convince the farmer whose income is affected, while the professional agriculturist is oblivious to this basic importance of weed control. This cannot continue, but can only be changed by a planned effort…"* Furtick (1969)

Remembering Our Founders

As our forefathers imagined, the APWSS provided both the foundation and the coordination for the initial '*planned effort*' referred to by Furtick (1969). Clearly, as attested by the success of APWSS Conferences, weed scientists in the region felt they '*belonged*' to a worthwhile community, through knowledge-sharing.

The nascent APWSS also brought the 'science' of weed management to the attention of agriculture and land managers of the Asian-Pacific tropics, who had been largely by-standers in the evolution of the discipline. Until the late-1960s, major developments in weed science occurred mainly in USA and Western Europe (Chandrasena and Rao, 2017), where voices were also raising concerns over the environmental impacts of excessive use of herbicides (Harper, 1956; 1960) and pesticides (Carson, 1962). The founders envisaged the Society as a body that could also play a critical, peer evaluation role for scientific claims made about weeds, while also providing a conduit for information and networking, across the Asian-Pacific and other regions. In an ideal world, our founders also hoped the APWSS could provide a scientific perspective on weeds, agriculture, and environmental issues to governments in the region to help them formulate national policies.

In my view, our Society was founded at an optimistic time, when scientific research funding was more generous than at present, if one could convincingly argue a case, and weeds were one such topic. The world had just seen the great positive impacts of the 'green revolution' and there was genuine optimism that the poverty and malnutrition, which had tormented developing countries, could be solved by new hybrid crops and other technological advances in agriculture.

Throughout the 1960s, led by applied ecologists; Weed Science took shape as a serious, multi-disciplinary subject, moving away from being a 'herbicide-led' science (see Harper, 1960). The changes in the direction of the discipline appear to have motivated our pioneers to realize the rudimentary nature of the discipline in the Asian-Pacific region. Initially this led to extensive weed surveys in different countries, as the basis for planning more effective weed control. One of the most important outcomes of the initial decades was the collaboration between weed scientists, which resulted in the monumental treatise - '*The World's Worst*

Weeds' in two volumes written by a team led by Leroy Holm (Holm et al., 1977; 1979). These, and other lasting legacies of APWSS initiated the dialogue on weeds and efforts to increase food production, while protecting the environment, in our region.

Therefore, honouring the three APWSS founders, I provide below summaries of their inspirational careers in weed science. The accounts are based on information that can be obtained from the Internet - if readers are further interested.

Dr. Donald L. Plucknett

Plucknett triggered the formation of the APWSS through personal letters he sent to various people in the Asian-Pacific region. He served as the second General Secretary of the Society for 14 years (1969 - 1981), proving the dedication he had for making APWSS a success.

Plucknett was born in DeWitt, Nebraska, and served in the Army Field Artillery Corps during the Korean War. Stationed at the Schofield Barrack in Honolulu, he attained the rank of lieutenant. He received his B.Sc. in 1953 and a M.Sc. in Agronomy in 1957from the University of Nebraska and his Ph.D. in tropical soil science from the University of Hawaii in 1961, where he later served as Professor of Agronomy and Soil Science. He had an extensive career in tropical agriculture and worked at the University of Hawaii for 20 years (Shinhoster Lamb, 2007). While on loan from the University, he went to Washington, DC to head the Natural Resources Management Program of the US Agency for International Development (USAID) where he served as Chief of Soil and Water Management at the Technical Assistance Bureau (1973-1976); Deputy Executive Director of the Board for Food and Agricultural Development (1978-79); and Chief of Agriculture and Rural Development in the Asia Bureau (1979-80). In 1976, he received USAID's Superior Honour Award for work in in International Development. He also served on several National Academy of Sciences' study panels. Dr. Plucknett later joined the World Bank and also served as Scientific Advisor of the Consultative Group on International Agricultural Research (CGIAR) in Washington, DC, during 1980-83.

Plucknett was a Fellow of the American Society for Agronomy, Soil Science Society of America, Crop Science Society of America, American Association for the Advancement of Science and the Linnaean Society of London. He led a delegation of agricultural specialists to China, as part of a scholarly exchange program between the Committee on Scholarly Communication with the People's Republic of China (CSCPRC). The report of that visit (Plucknett and Beemer, 1981) is an in-depth analysis of vegetable farming systems in communes, research institutions, agricultural colleges, and universities in the major suburban vegetable production areas of northeast and southeast China. It documents essential elements of systems of vegetable production in China's journey toward local self-sufficiency in food. It is interesting to note that Dr. Roman Romanowski (see below) was a key figure in the delegation and that he wrote or co-authored several Chapters of the report. At a time when China was not easily accessible to visitations by foreign scientists, this report was influential in opening up Chinese agriculture to the rest of the world.

He wrote or edited 20 books and over 200 articles in his career. He was a co-author with Leroy Holm, Juan V. Pancho and James P. Herberger on *The World's Worst Weeds* in 1977 and 1979 (Holm et al., 1977; 1979) and "*Weeds of the Tropics*" which he wrote with D. F. Saiki. In June 1977. Dr. Plucknett's other major work was "*Genebanks and the World's Food"* (1987), co-authored with Nigel J. H. Smith. This book warned that the international decline of genetic diversity can produce record harvests but creates crops that are defenceless against nature's threats. In an interview to the Christian Science Monitor, in 1985, Plucknett clarified that: "…*the loss of genetic diversity, particularly in crop gene pools, may well be the single most serious environmental problem facing mankind*…" Using his position as an expert in world food matters, Plucknett advocated strongly for the conservation of genetic diversity in crops through "Genebanks", preserving a wide variety of seeds.

Towards the end of his career, Plucknett was the president of his own agricultural research and development firm, based in Annandale, Virginia. He enjoyed traveling, reading and writing on a wide range of subjects, especially genealogy. As recorded by *The Washington Post* (see Shinhoster Lamb, 2007), he also loved singing and performing music. In 1989, he published a book of poetry, "*The Roof Only Leaked When It Rained*," which recalled his days in Nebraska. He passed away on 3 Sep 2007 at the age of 75.

Dr. Roman R. Romanowski, Jr.

Roman Romanowski was an Extension Specialist in vegetable crops and Professor of Horticulture at Purdue University (WSSA, 1982). He obtained his Ph.D. in vegetable production in 1961 from Cornell

University, was and became a recognized a vegetable crops authority. During his stay at the University of Hawaii as Associate Professor of Horticulture (1961-1969) he founded the APWSS, together with Plucknett and Furtick. While at Hawaii, Roman made many contributions to solving tropical weed problems.

After joining Purdue University in 1969, he developed a program to serve the vegetable growing industries in Indiana, in recognition of which he received the Junior Extension Specialist Award in 1980 from the American Society for Horticultural Science. In 1977, Roman was part of the Plucknett-led US delegation to study vegetable farming systems in the People's Republic of China. He co-authored the "*Weed Research Methods Manual*" published by the Weed Science Society of America (WSSA) in 1971 and was elected a WSSA fellow in 1981. He passed away on 20 September 1981 after an extended illness, at 50 years of age.

Dr. William R. Furtick

Bill Furtick, Professor of Crop Science and Weed Science, at Oregon State University (OSU), was among the first weed scientists to pioneer international collaboration in weed research through a program, which began in 1966 as a joint venture between the USAID and OSU. The program was carried out through the International Plant Protection Center (IPPC) at OSU focusing on weed control in the tropics, initially in South America and then, in Southeast Asia. Historical records would show that that Drs. Furtick, Romanowski and Plucknett came together to plan the APWSS through these weed research collaborative programs between the OSU and the University of Hawaii. From OSU, Dr. Furtick went on to Washington, DC to serve in a senior and influential position at USAID.

Born in Salina, Kansas, Bill Furtick graduated from Kansas State University and received both his Master of Science (1952) and Ph.D. (1958) degrees from the OSU. Until 1971, he was Professor of Crop Science and Director of the IPCC. In 1971, the United Nations called upon him to set up an Agricultural Research Center in Taiwan. Later, he became the Director of the Plant Protection Division at the Food & Agriculture Organization (FAO) of the United Nations (UN) in Rome. He left the FAO to become the Dean of Agriculture and Human Resources at the University of Hawaii; then, moved to Washington, D.C. to become the Director for Food and Agriculture in the Bureau for Science and Technology within USAID (Zimdahl, 2010). In between, Bill periodically lived and developed programs in several countries, such as Egypt, Jordan, and Georgia. During his career, Bill has worked in or visited all but five countries in the world. He was the President of the Weed Science Society of America (WSSA) in 1966 when he was only 39 years old. He served as President of the Western Society of Weed Science in USA in 1962 and was a fellow of both Societies.

During his distinguished career, Bill Furtick was appreciated by many students and peers. In the view of his staff and students, "…*had more ideas before breakfast than anyone else has in a year*…" (quoted in the Sep 2007, WSSA *Newsletter*, p. 7). He was Guest of Honor at the 8th Annual British Weed Control Conference in Brighton, England; and was also awarded an invitational address and membership in the National Research Council (NRC), National Academy of Science. The Association of Western Agricultural Experiment Station Directors made him a Director Emeritus in recognition of his leadership and outstanding service to agricultural research in the Western Region and the United States. As noted by Zimdahl (2010), "…*throughout his Weed Science and administrative careers, Bill Furtick was an innovator of new weed management techniques and evaluation methods. He was, in the true sense of the words, a mover and shaker...*"

Founders' Dream: APWSS in the 21st Century

The launching of a new Journal is also an opportune moment to place our Society in the 21st Century and reflect on what lies ahead for our discipline. The APWSS now sits alongside several other august bodies, which deal with weeds. These include the *Weed Science Society of America* (WSSA), the *European Weed Research Society* (EWRS), the *Canadian Weed Science Society, Indian Society for Weed Science* (ISWS) and the *International Weed Science Society* (IWSS). Having identified deficits in the knowledge of weeds and their control in the tropical, largely developing countries, our founders capitalized on the optimism that characterized the 1960s era. With convincing arguments, which attracted donor funding, they began a journey to transfer knowledge on more effective weed management from the 'western' advanced economies to the Asian-Pacific region. Their dream was *to link Weed Science knowledge to practical action* using their insights about what worked and what did not.

Linking Weed Science Knowledge to Practical Action

It is well known that, in many developing countries in the Asia-Pacific region, there is a significant gap between the agricultural technology available to farmers, and what they can afford. Therefore, there is a responsibility for our Society to encourage the adoption of state-of-the-art approaches to managing weeds. Weed management programmes in the future must be re-aligned to maintain the balance between economic, social, and environmental concerns. This requires an analysis of the ecological, biological and physical factors within the entire landscape, because weeds are only one constraint on agricultural production because weeds are only one constraint on agricultural production, so we need to be mindful of other interactions as well.

Published literature and the vast collection of APWSS Proceedings indicate there is a good baseline of knowledge on weeds, weed issues, and weed management frameworks available in the Asian-Pacific region. The proceedings of the Society also indicate that there are wide differences in how weeds are managed between countries. The differences reflect not just economic disparities, and possibly, proportion of populations attaining higher levels of education, but also funding and priorities. For instance, poverty alleviation and food security are the highest priority in developing countries of the region, whereas developed economies are struggling with social issues like ageing populations and labour shortages, (e.g. Korea and Japan).

Land-clearing, de-forestation, soil erosion due to over development are common problems, as are other environmental concerns (i.e. pollution of waterways). Despite this, in all countries we find deficiencies in funding for on-ground weed control programmes and weed research. Australia and New Zealand are classic examples where funding for weed management has sharply declined over the past two decades, except perhaps for managing herbicide resistant weeds. The decline in funding has forced the community to implement major weed management programmes, with governmental agencies often taking only a ‘backroom’ managerial role.

No doubt all countries have made errors in introducing exotic plants where they did not exist before, for perceived benefits. In taking action to reduce this risk, Asia-Pacific countries can certainly benefit from the experience of the ‘islands’, of Australia and New Zealand, which have developed excellent ‘border protection’ policies and Weed Risk Assessment (WRA) frameworks, which have been globally adopted. Key long-term strategies that are likely to minimize the negative impacts of weeds in the Asian-Pacific region include the control? of species that can become weeds in different countries, or regions, through risk assessments and strict regulations of plant imports, biosecurity, and other prevention methods.

Education and Extension Services

Extension is one of the most important processes in Weed Science, since it informs the end user – usually, the farmer, about which weed control methods may be beneficial to increase production, while safeguarding the environment. However, farmers are not the only ones who need to be informed. Decision makers, such as politicians, administrators and the public also need to be accurately informed of the importance of managing weeds and the methods appropriate for the task. As John Swarbrick (1991), an APWSS stalwart suggested, successful extension requires that the receiver has confidence in the giver of that information. Whatever the discipline or topic, the extension officers need to have the right attitude, background, knowledge and culture to successfully transfer information to farmers or others. These considerations were front-of-mind matters for our founders. Training in weed science, at the level required, is crucial in the region. Several APWSS countries have been active in promoting such training of extension officers, as evident in the activities of our affiliated societies.

Weed science education and extension in the region clearly needs to promote the need to adapt technology to suit local conditions and practices. New herbicides or integrated weed management packages are unlikely to be adopted unless weed researchers and extension workers ensure that what is recommended is actually practicable ‘on the ground’, within the environmental, socio-cultural and economic conditions of farmers and non-farming communities in the region. The importance of local research and demonstration trials cannot be overstated to achieve longer-term success, and in many situations, adoption of a good weed control method will require innovation, to modify the available approaches.

Reviewing the APWSS literature, it is evident that agricultural practices in our region vary from highly industrialised to subsistence systems; and from extensive monocultures to small areas of shifting cultivation and mixed cropping. Some of the more

productive systems require high-energy inputs (mechanical or chemical energy), while other systems continue to rely on human and animal power and low inputs with modest or low productivity. Production methods based on high-end technology, may not always be appropriate for agriculture in a good proportion of the Asian-Pacific countries. Farmers in the region often rely on governmental and non-governmental sources for information, advice, credit and support, because they cannot afford complex, external support systems. Sophisticated environmental monitoring systems; GIS-linked, web-based information systems for predictions of local weather, or instruments for measuring irrigation water availability are scarce in the APWSS region, except in the highly advanced economies (such as Australia, New Zealand, Japan and Korea). These present particular challenges in the region for promoting effective management systems in agriculture or in environmental protection.

Failure to realize the wide gulfs between existing production systems will lead to waste in all aspects of weed research, education and extension. The wide diversity of people and cultures in the Asian-Pacific region means that '*one-size fits all*' solutions will not work. Therefore, APWSS must promote research, which is local and appropriate. The process to do this well is by consultation and information exchange through existing or new networks. Fast-evolving technology allows scientists to connect with each other much more freely. Casting an eye on the future, as an over-arching regional Society, APWSS must continue to energize member countries and their local societies to engage with all stakeholders on weed-related matters.

A Final Word: Hope and Responsibility

As a final word, in paying due respect to our founding fathers, I ask – *have we fulfilled their dream*? I also ask - *what have we learnt from Weed Science in the past 50 years*? *Do we know why we have weeds*? *Do we know why they behave in the way they do*? *Are all weeds evil*? Through Weed Science, have we learnt how to be a sustainable society? Have we learnt how to be innovative, to protect our environment, to adapt to changes and at the same time, produce sufficient food for humans and animals?

As significant as the accomplishments have been, in my view, the full potential of Weed Science is yet to be realized in the Asian-Pacific region. Our science is not just about just weed control. The maturity of the discipline would help show the way in shaping and improving our management of all natural resources, not just agriculture. I find that the development of weed control practices over the past 50-60 years, promoted by APWSS, has resulted in major improvements in how we deal with weeds throughout the region. As weeds are an important component of agricultural systems, recent increases in crop yields, can be partially credited to improved management of weeds. In addition, all over the region, there appears to be more confidence in addressing weed-related issues in 2017 than in 1967. Yet, we know that Weed Science is the most poorly funded discipline within the broader area of crop protection.

Our primary goal in weed management should be the integration of the full gamut of tactics and techniques that can be used against weeds. Perhaps, a qualifier may be added – *do so, only when and where there is a significant problem with weed abundance*. Only then will the potential benefits of weed control be sustainably realized. To achieve this goal, we need a complete understanding of the ecological role of weeds; the relationship weeds have with crops, the thresholds at which they become problems (in agriculture), and their interactions with other plants (in natural ecosystems). Although much is known about these aspects, this knowledge is incomplete for major species, particularly, under new conditions caused by climate change.

Understanding weeds still lags a long way behind our inadequate attempts to control them. Also, globally, taxonomic studies on weeds stands out as a research area greatly in need of attention. We believe that our region can take the lead in recognizing the special attributes of these species, as important components of the earth's biological resources. Although success brings weeds *occasionally* into conflicts with humans, the corpus of Weed Science literature supports the viewpoint that *not all weeds are bad all the time*. Given this, we believe that human populations and societies in the Asian-Pacific Region will benefit by focusing on a more holistic weed management paradigm, which includes resolving conflicts with weeds amicably, and perhaps even co-existing with them. Instead of continuing an unsustainable war against weeds, perhaps a better approach for the region would be to train the next generation of weed scientists to develop a *healthier attitude towards weeds*; recognize them as highly

successful biological resources, rather than enemies, and manage them to the situation.

The history of Weed Science, so well documented elsewhere, acknowledges that weed occurrence is inevitable where human habitation and disturbances continue, and there is no simple remedy for the problem of weed persistence in its many manifestations (Timmons et al., 2005; Zimdahl, 2010), However, *weeds are a symptom of inappropriate land-use*; for instance, over-exploitation of land for various forms of agriculture, conversion of grassland ecosystems for pasture, land-clearing for human settlements and linear infrastructure, such as rail and road, and other human-caused disturbances. The more we understand this, the better we will be at planning how to manage plants that thrive under such disturbances. This, should be the primary focus of APWSS, going forward, in the 21st Century.

When seen through a broader lens, weeds can be a *powerful tool* to understand Nature and the interrelationships between organisms (all plants, including weeds; and all animals, including humans) and the environment. We now live in a world, separated so much from Nature, by our busy lives and aspirations, and confusion, through the pace of technology change. Perhaps, enjoying a moment with weeds, which thrive in inhospitable environments, will open our eyes. This understanding may also lead us to respond more effectively to some of the major challenges we face today: a burgeoning population; poverty; inadequate energy and food; negative impacts from over-exploitation of resources; pollution and other forms of environmental degradation. *Weeds themselves cannot alone be blamed for our inability to produce enough food; to reduce poverty or prevent the degradation of our environment*.

As I look back, the noble vision, which inspired our founders, remains unabated after six decades. The remarkable contribution of APWSS Conferences to Weed Science attests to this. Redeeming the discipline, in a practical sense, across the Asian-Pacific and possibly, influencing the broader region, must continue to be our primary goal, while making suitable adjustments of direction to take up new challenges, such as the rapid development of herbicide-resistance in weeds and the impacts of climate change on weed-related issues. Making the APWSS relevant in the 21st Century requires wider engagement with global movements of similar ilk, and networking, to share knowledge and experiences that will inspire the current and next generation of weed scientists. Given there is little consistency in approaches to dealing with weeds in the different member countries, developing a common agenda to educate and influence national policies must be a priority for the APWSS.

With the new Journal -*Weeds*, there is a heightened responsibility for the APWSS to apply the most stringent scientific rigour to all contributions in Weed Science, so evidence-based science can be promoted, backed by formulating and testing valid hypotheses with critical evaluations of data and information. Only then can appropriate national or regional weed management policies, based on solid science be developed. *Weeds* must also strive to promote responsible weed management. This means consideration of options and planning any deployment of tools *after* one has understood the most probable causes of why certain weeds are there in the first place and how they can be sustainably managed.

Due respect to the environment must be at the front of mind of those who do weed management planning. Our founders would agree that future generations of weed scientists should not be seduced by easy solutions or silver bullets. Most contributors to the new journal are likely to share a goal of achieving a sustainable future for the Asian-Pacific region and also, for the planet. Sustainability does not mean stasis. It means change and benefiting from change. A sustainable future is one that encourages innovative opportunity for people to learn and prosper; that incorporates responsibility to maintain and restore the biological diversity of nature; and that is based on a just, civil society. I am inclined to think that such an attitude, hope and responsibility, would be an important way in paying homage to our founders.

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