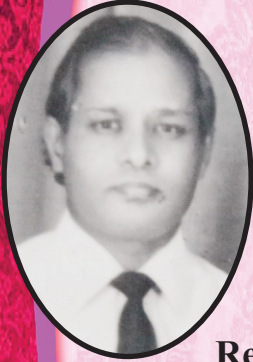




University of Jaffna

Prof. Somasundaram Kandiah

Memorial Lecture – 2022



**Reviving Sri Lanka's Agriculture -
A Herculean Task Ahead**

by

Prof. Buddhi Marambe

Senior Professor in Crop Science

Faculty of Agriculture

University of Peradeniya

on

Wednesday 21st September, 2022 at 2.30 p.m.

at

Auditorium

Faculty of Agriculture

University of Jaffna

Ariviyal Nagar, Kilinochchi



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Message from the Vice Chancellor

Late Prof. Somasundaram Kandiah was the first Dean of the Faculty of Agriculture, University of Jaffna. He was born on 09th September 1936 in Ariyalai, located to the East of Jaffna Peninsula and went for his secondary education to St. John's College, Jaffna. He has completed his Bachelor of Science degree from University of Colombo and earned his doctoral degree from University of London. His doctoral research was focused on developing dwarf types of apple trees through plant breeding. After the completion of his PhD, Prof. Kandiah has returned to the country and joined as a research officer at Tea Research Institute of Sri Lanka. In 1978, Prof. Kandiah got recruited as Senior Lecturer in Botany at the Faculty of Science, University of Jaffna. At the Faculty of Science, he served as the Head of the Department of Botany and later promoted to associate Professor in Botany.

In 1990, Prof. Kandiah has accepted to serve as a Professor in Agronomy for the newly established Faculty of Agriculture in Kilinochchi although many of the Tamil academics were leaving the country as the civil war was worsening in the region. Thereafter, he was unanimously elected as the first Dean of the Faculty in October 1990. Many of his very first students of the Faculty of Agriculture remember him as a dedicated teacher, tireless researcher, committed administrator and was very keen to understand and solve students' problems. He has supervised many research students on the areas of improvement of horticultural crops and palmyrah in the northern region.

During the hard times of Sri Lankan civil war, he used to travel by bicycle from Kilinochchi to Jaffna through Poonakary road with few other faculty academics. On 23rd March 1991, Prof. Kandiah has met an untimely death due to a cardiac arrest while he was cycling back to Kilinochchi after attending the senate meeting at University of Jaffna. The Faculty of Agriculture was upset and suddenly lost an excellent academic while on service. His dedication and commitment of service to the Faculty of Agriculture, is ever remembering by the University of Jaffna.

The Faculty of Agriculture was planning to hold the memorial lecture annually to appreciate the services of its first dean Late Prof. Somasundaram Kandiah and I am happy that it has been materialized from this year onwards. Moreover, we are delighted to have Prof. Buddhi Marambe from University of Peradeniya to deliver this first Late Prof. Kandiah memorial lecture.

Prof. Marambe is a Senior Professor in Crop Science at the Department of Crop Science, Faculty of Agriculture, University of Peradeniya and Prof. Marambe is a renowned researcher in weed science. He earned his B.Sc. degree in Agriculture from the University of Peradeniya and M.Agr. and D.Agr. degrees in Plant Environmental Sciences from Hiroshima University, Japan. He has authored more than 150 research articles in reputed journals, book chapters, books, monographs and conference papers on the areas of weed science, herbicide resistance and food security. He also serves as the Editor in Chief of the Sri Lanka Journal of Food and Agriculture (SLJFA).

Beyond teaching and research, Prof. Marambe served in many reputed administrative positions at University of Peradeniya. He was the former Dean of the Faculty of Agriculture, University of Peradeniya during 2003-2009. He also served as the Director of Agriculture Education Unit (AEU) of the Faculty of Agriculture, Chairman of the Board of Study in Crop Science at the Postgraduate Institute of Agriculture and as the Director of the OTS at University of Peradeniya. Moreover, Prof. Marambe was very instrumental in contributing to the national agricultural policy of Sri Lanka. He served as the chairman of the National Invasive Species Specialist Group of the Ministry of Environment, Sri Lanka and the member of the National Experts Committee on Climate Change Adaptation of the same ministry.

University of Jaffna would like to express its gratitude to Prof. Buddhi Marambe for agreeing to deliver the late Prof. Kandiah memorial lecture for the year 2022 on the title of "Reviving Sri Lanka's Agriculture - A Herculean Task Ahead". I believe this talk will enlighten the contemporary issues on agriculture and food security in Sri Lanka and empower the regional agricultural development to revamp the economy of the country.

All glories to Almighty.

Prof. Sivakolundu Srisatkunarajah,

Professor in Mathematics,

Vice Chancellor,

University of Jaffna.

**Prof. Somasundaram Kandiah Memorial
Lecture – 2022
Reviving Sri Lanka's Agriculture - A Herculean
Task Ahead¹**

Buddhi Marambe

Faculty of Agriculture, University of Peradeniya,
Sri Lanka

bmarambe@pdn.ac.lk

The crisis:

The Sri Lankan economy has contracted by 1.6% and 8.4% in the first and second quarters, respectively, of 2022. Alarming, the agriculture sector was contracted by 6.8% during the first quarter and 8.4% in the second quarter of the year. In fact, the agriculture sector was growing at +6.4% and +11.2% during the first and second quarters of 2021. The most recent press release by the Department of Census and Statistics has stated that the shortages in supply of fertilizers and chemicals have made destructive conditions on agriculture² resulting in a direct and major impact on agricultural sector, especially reducing the paddy yield by approx. 37% in *Maha* 2021/2022 compared to that of *Maha* 2020/2021.

The irrational policy decision by the Cabinet of Ministers in April 2021 to immediately ban the import of synthetic fertilizer and

1. “Prof. Somasundaram Kandaiah Memorial Lecture”, University of Jaffna, Sri Lanka. 21 September 2022.

2. DCS (2022): National Accounts Estimates of Sri Lanka - Second Quarter of 2022 (Press Release, 15 September). Department of Census and Statistics, Sri Lanka.

pesticides, virtually converting the whole country into an “experimental field for organic agriculture’, has paid the price. At last, the facts presented by the mandated government agency that provide national accounts have over-ridden the myths propagated and decisions made without a valid scientific base. The results distressingly illustrate the severity of the damage to the agricultural economy of Sri Lanka in less than one year of imposing an unfortunate, hasty decision. The Sri Lankan agriculture sector has headed towards a man-made disaster at a massive cost to the society and irreversible negative impacts.

Food crisis has become imminent and has already sent shockwaves among all strata of the Sri Lankan society. The joint food security assessment of Food and Agriculture Organization and World Food programme³ reported that over 6.2 million people (28% of the population) are estimated to be moderately acute food insecure and 66, 000 people to be severely acute food insecure. The urban population usually feels the first impact of a food crisis. This is mainly because of the breakdown of the urban-rural connectivity in the food system, especially the City Region Food Systems.

The reality:

The uncertainty in the future agricultural production process, the possibility of crop failure in 2022 *Yala* season, etc., have aggravated not only the food crisis but also the fear of food

3. FAO and WFP (2022): Crop and food security assessment mission (CFSAM) to the Democratic Socialist Republic of Sri Lanka (September 2022). Food and Agriculture Organization (FAO) and the World Food Programme (WFP).

insecurity in people's minds. In such a situation panic buying and food hoarding by some supply chain actors and the consumers could create artificial food shortages in the market. This practice in return would raise food prices, making them unaffordable to many connecting dots in the vicious cycle. Furthermore, it is high time to take a closer look at the amount of food we throw away, especially from the food plate. We should reduce food waste as much as possible, especially during a food crisis. The amount of food waste from the household food plate is about 10% on average. The wastage is 15-30% in restaurants and hotels and can increase to around 50% in buffet-style catering at events (Dr. Anuruddha Karunaratne, Faculty of Agriculture, University of Peradeniya – Personal Communication). Food waste in major hotels is often used as animal feed in farms, but such use is minimal in households. Therefore, reducing or preventing food waste is an immediate action that would benefit the country enormously. This will reduce the pressure on the food supply and on finding foreign exchange for food imports at such a difficult time.

According to the Ministry of Agriculture (MOA), apart from paddy production, the production of maize in the last *Maha* (2021/2022) and present *Yala* (2022) seasons has drastically dropped due to the ban on the use of chemical fertilizers further increasing the risk of food and nutrition insecurity in Sri Lanka. The production of liquid milk, eggs and poultry meat has decreased due to lack of maize that is required to produce animal feed and “*Thripasha*” (an additional food rich with nutritious quality). Sri Lanka has already stopped using locally produced or

imported rice for animal feed. On the face value, this seems a good decision. However, in a crisis where animal feed also becomes a scarce commodity, such decisions can also escalate ‘hidden hunger’, the protein malnutrition. We have already start experiencing the exorbitant price escalation of chicken egg (and meat), one of the cheapest sources of nutritious food available to children, pregnant women, lactating mothers, and elderly. With unaffordable nutritious food, the irreversible impact of malnutrition will only be seen in years to come.

From March to June, the production of broiler meat decreased by 30% from 18,000 Mt to 12,000 Mt a month, with sharp increase in prices (e.g., over LKR 1,500 per kg in early September 2022 from LKR 460 in March 2022). Daily egg production, which used to be between 700,000 and 800,000, has now dropped to about 400,000, and prices have risen well above LKR 50 per egg from LKR 17 reported in March 2022 (Mr. Ajith Gunasekara, Chairman of the All-Island Poultry Association of Sri Lanka – Personal Communication).

Tea, being the main agricultural export crop, has recorded a loss of 34.7 million kg of made tea during the period January-July 2022, an 18.8% loss compared to that of the same period in 2021. The tea export volumes have reduced by 9.77% in January-July, 2022 recording a loss of 14.77 million kg compared to a year ago. The foreign exchange earnings from tea was reduced by USD 70.4 million in January to June 2022, a 10.8% reduction

compared to a year before⁴. We have lost a significant amount of foreign exchange at a time it was required most.

The need:

When the input supply is limited, prioritization of crops becomes a must in terms of their use. A few months ago, the scientists and academia strongly recommended making paddy (main food crop), maize (main feed crop) and tea (main export crop) as prioritized crops in such scenarios. This is not to neglect all other crop sectors in terms of input supply.

Furthermore, scientists and academia have highlighted the urgent need to provide adequate fuel to support the distribution of rice and other food products throughout the entire food system. It is important to note that the MOA has prioritized the crops to provide fertilizer and fuel service stations have been designated to provide the requirement of the farming community. However, the fuel supply requires effective mechanisms to be implemented without delay. Sensing the crisis, the government of Sri Lanka has imported about 536,000 Mt of rice by the end of July 2022. This is due to the reduced paddy production in Sri Lanka during *Maha* season 2021/2022 and predictions done by scientists and academia on the lower production *Yala* season 2022. All these activities will push the barrier of food crisis further away. This is our hope and the overall objective of such exercises. However, Sri Lanka should gradually curtail imports and have a fresh look at

4. Ceylon Tea Board Export Data, January to June 2022.

the import requirements based on the need for the first quarter of 2023 as the *Maha* season harvests will only begin in end of January or early February of the year.

Making the next *Maha* season (2022/2023) a massive success in food production is a major task to be achieved. This would help us having a leap jump forward in regaining the food security status that the country has lost during the past few months. It is important to note that the agriculture that was ‘destroyed in seconds’ cannot be revived in one season. Securing seed paddy requirement (approx. 80,000 Mt) for the *Maha* season from the output of the *Yala* season, acquiring finances from the World Bank (WB; USD 110 million) to procure 150,000 Mt of Urea and the Asian Development Bank (ADB; USD 40 million) to procure 40,000 Mt of Muriate of Potash (MoP) for the *Maha* season 2022/2023 are some commendable initiatives by the MOA, Department of Agriculture and other line agencies on the road to revive agriculture in Sri Lanka. This is in addition to the 65,000 Mt of urea imported during the latter part of *Yala* season 2022 from Oman through the Indian Credit Line. Recently, the United States Agency for International Development (USAID) pledged nearly USD 46 million to procure about 36,000 Mt of Triple Super Phosphate (TSP). Still more to be done. The quality of the secured seed paddy requirement is still a question. The finances for TSP procurement arrived late and hence, the fertilizer may not reach Sri Lanka on time to apply fertilizer as a basal dressing in paddy cultivation. One way out is to provide the limited quantities of TSP currently available in Sri Lanka to paddy

farming in Ampara and Batticaloa districts on a priority basis where soils in some parts seems to be deficient in phosphorous.

The financial pledges from the Development Partners of Sri Lanka to procure fertilizer are targeting only paddy production (main staple) during the *Maha* season 2022/2023. However, we should not ignore the maize (animal feed) and tea (major export earning crop) cultivation that requires due attention to get the agriculture sector back on track. Sri Lanka currently faces an issue of having adequate quantities of hybrid maize seeds to be planted in the *Maha* season 2022/2023. As such, we only expect about 60-65% of the land extent of an estimated extent of 125,000 ha to be cultivated for maize in the forthcoming season. About 600,000 Mt of maize are needed annually to fulfill the requirement of Sri Lanka. The United Nations Development Programme (UNDP) and Japan International Cooperation Agency (JICA) have come forward to support the MOA to procure 200 Mt of hybrid maize worth approx. USD 1.8 million to be cultivated in the dry zone of Sri Lanka during the *Maha* season 2022/2023.

Finally, we now see that the policymakers are getting ready to face the reality, understanding the science behind agri-food production, and have left aside their whims, fancies and over-reliance on illusions. However, there are no positive signs of adequate volumes of essential agro-pesticides (herbicides, insecticides, fungicides) being made available to the farming community for crop protection, due to shortage of foreign currency. The smuggled pesticides that have been banned several

years/decades ago in Sri Lanka due to their mammalian and environmental toxicity, seem to have invaded the markets to fill gap of availability of pesticides. The well-regulated pesticide market in Sri Lanka has fallen apart creating more problems especially for human and environmental health than ever before, owing to one unjustified decision made.

Agriculture in Sri Lanka does not end with the completion of the next season (*Maha* season 2022/2023). It will continue soon after harvest and with another *Yala* season in 2023, and so on. Many institutions, including the Faculties of Agriculture of State universities, have lined up to strengthen the operational mechanism of the government institutions, private sector and farming community to develop the agriculture sector. The policymakers should ensure that there are no unnecessary political interventions, but facilitate the operations of mandated institutions through responsible and accountable decision-making on a scientific basis. The planning process should start now with the active engagement of key stakeholders.

The interim budget approved by the Parliament of Sri Lanka in August 2022, has recognized the need to tackle food insecurity of the country. It suggests developing a National Food Security Programme, adopting a National Food Security Bill, ensuring input supply, supporting value chain development, food packaging and food transport (e.g., using railway), promoting export-oriented agriculture, and many more to stabilize the economy and facilitate growth of Sri Lanka. The agriculture policies developed in the recent past should be implemented soon

with the approval of Cabinet of Ministers, if well-coordinated actions to be implemented at national, provincial and local levels. The Overarching Agriculture Policy (OAP) developed in 2020 addressing eight sectors related to agriculture, and the National Agriculture Policy (NAP) developed in 2021 focusing on sectoral development (food and feed crops) will set up a strong base for these. None of us want to experience a food shortage in the future. The “National Food Security” should not be compromised at any cost.



Prof. Buddhi Marambe

Prof. Buddhi Marambe is a Senior Professor in Crop Science attached to the Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka. Prof. Marambe studied at Ananda College, Colombo completing his primary and secondary education. He obtained his B.Sc. degree in Agriculture from the University of Peradeniya in 1985 and M.Agr. and D.Agr. degrees in Plant Environmental Sciences from Hiroshima University, Japan (1988-1993). Prof. Marambe joined the Department of Crop Science, Faculty of Agriculture, University of Peradeniya as a Lecturer (Probationary) in Crop Science in October 1986 and promoted to Professor in Crop Science from April 2003.

His research areas are focused on weed science, invasive alien species, climate change, and food security. He has authored more than 150 full research papers in peer-reviewed journals. Furthermore, Prof. Marambe has written several book chapters, books, monographs, country reports and conference abstracts. He is the Editor in Chief of the Sri Lanka Journal of Food and Agriculture (SLJFA) and serving as a member of the editorial board of several other journals.

Prof. Marambe has also played several key administrative roles at University of Peradeniya. He was the former Head of the Department of Crop Science, University of Peradeniya (2001-2003) and former Dean of the Faculty of Agriculture, University of Peradeniya (2003-2009). He also served as the Director of the Agriculture Education Unit (AEU; 2009-2015), Chairman of the Board of Study in Crop Science at the Postgraduate Institute of Agriculture (PGIA) and as the Director of the Operations Technical Secretariat (OTS) at University of Peradeniya.

Furthermore, Prof. Marambe has immensely contributed in developing several national policies related to agriculture in Sri Lanka, and served as a member in the national committees and Sri Lankan government delegations. He was appointed as the national expert to develop an Overarching Agriculture Policy for Sri Lanka in 2018 and as the team leader of the technical expertise group to develop the National Climate Change Policy in 2011. He is a member of the Sri Lankan government delegation in climate negotiations at the Conference of Parties (COP) under UNFCCC. Moreover, he has served as a consultant for numerous national level projects funded by international agencies such as World Bank, ADB, FAO, UNDP, EU, etc. Prof. Marambe has supervised several M.Sc., M.Phil., and Ph.D. students. He was also active on contemporary issues of agriculture sector in Sri Lanka and creating awareness among the stakeholders and general public.

