International network on preserving safety and nutrition of indigenous fruits and their derivatives

#### Research Training Workshop on Facilitating uptake by SMEs of Research on New Processing Technologies for Underutilised Fruits

# Venue: The Board room of the Faculty of Agriculture, University of Peradeniya, Sri Lanka 13<sup>th</sup> - 15<sup>th</sup> May, 2013, Kandy, Sri Lanka.

#### Workshop Proceedings

#### Introduction

The final workshop of the international network on preserving safety and nutrition of indigenous fruits and their derivatives was held in Sri Lanka, with a focus on facilitating uptake by SMEs of research on new processing technologies for underutilised fruits and their derivatives. The three-day workshop was jointly organized by the Centre for Underutilised Crops (CUC) at the University of Southampton, the Agriculture Education Unit of the Faculty of Agriculture, University of Peradeniya, Sri Lanka and the ICRAF-Sri Lanka Program and funded by the Leverhulme Trust, UK and ICRAF-Sri Lanka program. The workshop was attended by 23 people including project partners from Bangladesh, India, Cambodia, Vietnam, France and the UK and academics, government researchers and SME entrepreneurs from the host country, Sri Lanka (see Appendix 1). The detailed workshop programme is available in Appendix 2.

#### The workshop's objectives:

- 1. To enable participants to exchange best practices on how to ensure uptake by SMEs of fruit processing technologies through:
  - Engaging SMEs in research planning
  - Collaborative research with SMEs
  - Targeted dissemination and transfer of technology to SMEs
- 2. To support network participants in writing funding proposals
- 3. To draft dissemination outputs based on the network's previous workshops targeted at different audiences

The workshop programme consisted of a first day of presentations and discussions on engaging in collaborative research with SMEs, a second day of training on how to write a research proposal and dissemination of results, and a third day comprising a field trip to an ISO 2000:2005/HACCP certified food processing industry in Kandy, Sri Lanka.

#### Day 1: Monday, 13th May 2013

#### **Opening Session**

The opening session consisted of registration followed by the Sri Lankan tradition of lighting of the oil lamp. The welcome address was given by Prof DKNG Pushpakumara, Faculty of Agriculture, University of Peradeniya, Sri Lanka. Dr Pushpakumara warmly welcomed the participants and expressed his appreciation for their attending the workshop. He highlighted the importance of indigenous fruits as these are the raw material for functional and nutritional products for SMEs. He

also urged the participants to pay more attention and effort for its better utilisation in south Asia and south East Asian region.

Dr Kate Schreckenberg, Coordinator, Centre for Underutilised Crops (CUC), University of Southampton introduced the network aims, objectives and activities. She outlined the specific workshop objectives and the intention to develop research ideas for innovative technologies for food safety and hygiene. She emphasised the importance of a good research proposal that includes a good research question, excellent partners, clear pathways to impact and a relationship with the funder.

Prof Buddhi Marambe, Director of Agriculture Education Unit (AEU), University of Peradeniya also welcomed the participants. He outlined the success of the Agriculture Education Unit which originated in 1948 and runs alongside other relevant centres such as the Agribusiness Centre, established in 1998, and the Agricultural Bio-Technology Centre established in 2003. The AEU focuses on training and only does research if there is a training component. They have some linkage programmes with USA and Japan.

Prof K Samarasinghe, Dean, Faculty of Agriculture and chairman of AEU informed the participants that the Faculty of Agriculture is the oldest and largest faculty in Sri Lanka. He also explained in brief the academic programme (including three degree programmes and a strong PhD programme) and outreach activities of this faculty.

Prof Athula Senarathne, Vice Chancellor of the University of Peradeniya, Sri Lanka expressed his delight to attend this important workshop. He underscored the importance of indigenous fruits which are abundant but underutilised in Asian countries. He hoped this platform would bring all the stakeholders together for a successful outcome.

# <u>Technical Session I:</u> Engaging SMEs in research planning in partner countries (Chair: Prof HPM Gunasena)

Dr KH Sarananda, Food Research Unit, Department of Agriculture, Peradeniya, Sri Lanka, Prof DKNG Pushpakumara & Prof DAN Dharmasena, Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka and Mr CR Gunawardena, Institute of Postharvest Technology, Research and Development Centre, Anuradhapuraya, Sri Lanka. <u>Engaging SMES in research planning and research related to fruit and vegetables in Sri Lanka</u>

Dr Sarananda highlighted the potentiality of fruits and vegetable processing in Sri Lanka. At present quite a large number of SMEs are involved with processing of fruits and vegetable. Some of them are exporting their products to EU countries and Japan. However, most SMEs are exporting dehydrated or minimally processed fruit. He presented case studies which highlighted the problems of businesses based on fruit that are only available for part of the year, and the issue of market competition which requires a focus on better (earlier, later, improved) varieties and assured quality of products. The sector is facing problems in acquiring appropriate technology due to bureaucratic systems and policies. Research planning tends to be top-down with little SME engagement and the university has to charge SMEs for research on specific issues.

Discussion points included the fact that personal contacts between researchers and SME staff are important to encourage appropriate research and technology transfer. A 6-monthly stakeholder forum exists for the 1200 coconut growers in the country but it is difficult to see how to repeat this for the more scattered stakeholders in the indigenous fruit value chain.

Dr Samira informed the participants that she worked in Madagascar with SMEs producing vanilla and cloves to improve quality and food safety of the products. These projects were funded by the EU to link research centres with SMEs and support SMEs in expressing their research needs. Improving the quality of the exported product also led to better quality and practices for the domestic market.

Partners from India informed the audience that the research has been carried out on processing and food safety and quality assurance. The main problem for SMEs is where to market their products nationally and Amity university tries to help with this (international exporters are usually large enough to do their own market research). They organise regular meetings with the SMEs to define their problems and research needs.

Partner from Bangladesh explained that about 700 food industries are registered out of which 30 industries are actively involved in food processing. Their main products are jam, jelly, pickles and dehydrated products which are marketed in local and foreign ethnic markets. Their key problem is maintaining the quality and food safety of their products. BARI (Bangladesh Agricultural Research Institute) has annual research planning workshops which involve producers. Their previous focus was on grains but there is a shift to looking at nutritional security so there is more government support for research on fruits.

Partners from Cambodia explained that the Institute of Technology of Cambodia stimulates collaboration with SMEs to address their problems in the areas of engineering including processing, quality, and safety assurance. Two new projects funded by JICA and CUD of Belgium are running to supports the SMEs in the area of food processing and quality aspects. This has included the establishment of a unit in ITC for industry-university linkages. Last year SMEs had to pay 10-20% of the research costs, and they are beginning to look into the issues of intellectual property rights (i.e. whether research paid for by one SME should be shared with others).

In Vietnam, there is a range of ways SMEs can have research undertaken. They can go directly to a university or work through a research consultant, who provides links to appropriate domestic and international research centres to address their problem.

Business secrecy means that SMEs often do not want to share information or organise themselves in associations. There is a need to distinguish issue which are of common interest (e.g. all SMEs have concerns about quality, water, microbiology) regardless of processing technology, and which could be the subject of common interest or discussion within an association, and those which are specific to a particular company and process. There is a need to have good research contracts to increase trust between researchers and users. SMEs are most likely to be successful if they have a range of products enabling them to be active year-round, and it may also be advantageous to work on a combination of commercial fruit and indigenous fruit.

# <u>Technical session II:</u> Collaborative research with SMEs in partner countries (Chair: Prof HPM Gunasena)

Prof DAN Dharmasena, Faculty of Agriculture, University of Peradeniya, and Mr WMCB Wasala and Mr CR Gunawardena, Institute of Postharvest Technology, Anuradhapuraya, Sri Lanka. <u>Collaborative</u> research with SMEs in the fruit sector

Mr Wasala explained that the Institute of Post-Harvest Technology (IPHT) is the main institute engaged in improving post-harvest technology for rice/grains, field crops, fruit and vegetables. In relation to fruit and vegetables, their main research focus is on development of maturity indices, handling, packaging, storage, control of diseases. They disseminate research results to SMEs, farmers, policy makers and also to the large industries. The research needs of SMEs are established

through extension staff and through research planning meetings held with SMEs, although these tend to have relatively low participation. The main problems faced by Sri Lankan fruit SMEs is how to deal with seasonality (fruit gluts and price fluctuation), quality deterioration due to improper handling, commercial cultivation limited to only a few crops (low income from fruit cultivation), lack of infrastructure and technology, marketing issues, lack of financial support. The main focus of IPHT research in relation to fruits is therefore on finding a solution to deal with glut production, value addition to increase income, developing ready-to-use products to suit busy lifestyles, and initiating agro-based SMEs. The presentation ended with the case study of Lanka King's Food Products which was given support by IPHT leading to the development of a successful business selling jams, cordials and sauces, and employing 3 full-time and 8 seasonal staff.

After the presentation there was a lively discussion by the network partners and members of SMEs. They highlighted the importance of production cycle and typology of product. Some of them stressed the quality and the safety of the product. The partners from Cambodia and Vietnam informed the participants that they have no SME association or fruit farmer association to hold meetings with. In Cambodia, fruit juices cannot compete with the success of soft drinks.

Mr Vajira Balasuriya, Department of Agricultural Economics and Business Management, Faculty of Agriculture, University of Peradeniya, Sri Lanka. Commercialisation of technology and promotion of <u>SMEs</u>

Mr Vajira Balasuriya explained the challenges and constraints faced by SMEs in relation to underutilised fruits – these are generally cultivated in a non-commercial manner, have high seasonal variation, are limited to domestic markets, and trade is unregulated, informal and provides low incomes. A key player in the supply chain is the village or private trader who may act as intermediary between the producer and the consumer – these traders need to be targeted with information about quality, packaging, value-addition, etc. Farmers rarely want to get involved in value-addition and are happy to lease out their trees to small-scale entrepreneurs. With some training, the latter can develop mini-collection centres and mini- processing plants. A key issue is to correctly identify the market niche (e.g. product, service, industry, geographical, personality niches) of underutilised fruits.

Dr Neeru Dubey, Amity International Centre for Post-Harvest Technology & Cold Chain Management, Amity University, Uttar Pradesh, Noida, India. <u>Standardization of pre and post-harvest technologies</u> <u>for sustainable crop management and preparation of value added processed products from</u> <u>indigenous fruits viz- aonla, bael and jamun</u>

#### Breakout groups on SME support needs during the product development cycle

#### Group A: Research inputs needed for SMEs

1. At the production phase: Basic production is well taken care of by government extension services, but there is a need to improve the quality of raw materials for (organic) food processing, getting varieties for uniform flowering of pineapples.

2. Simple techniques (e.g. biosensors) for raw material quality assessment at the time of raw material purchase/before harvesting.

3. Problems of packaging related to shelf life of processed foods: e.g. nectar bottling – PET or glass for required shelf life.

4. To resolve the problems of marketing of processed foods especially by the micro industries: identification of the common financial limitations for the expansion of marketing their small-scale

productions in the highly competitive market (i.e. credit facilities, strategic management of bank loans and commissions to sellers, etc., when selling products).

#### Group B: Research input needs of SMEs in the product lifecycle

**Production:** The SME representatives present were not themselves producers, though they do source their product direct from producers. In the case of the organic SME, this means they provide a fair bit of extension advice to producers. Research needs mentioned related mostly to use of chemicals for ripening (e.g. ethiform). Its use is legal for flowering but illegal for post-harvest ripening yet farmers are using it to ripen pineapple and mango, for example. In Sri Lanka there is no lab that can test for ethiform residues so the company has to send samples to a lab in Europe – a very costly process.

Advice on this specific issue from network members included:

- Testing involves HPLC plus a fluorescence detector or LSMS.
- You can also obtain a hand-held device which can test for absence/presence of ethiform (but cannot quantify levels present)
- There is a lab in Singapore
- Cambodia will have the facilities necessary to do the testing in 2015

**Processing:** This is the main bottleneck when it comes to research needs. Companies do not know who to go to for information. One has tried to get support for his research needs at Peradeniya University, but unsuccessfully. Key research needs relate to quality, e.g. How to prevent browning of guava juice? How to preserve coconut juice without losing its taste?

Advice from network members included:

- Membrane filtration (though concerns that this might remove some nutrients along with microbes);
- High Temperature Short Time (HTST) treatment (i.e. 120°C for a few seconds), although the sterilisation equipment needs to be adapted for this process and it should be used with aseptic tetrapak packaging.

**Marketing:** Research needs here relate to lack of information about prospective markets for existing products (e.g. one company has a jackfruit/pineapple product which keeps well but has no market) and/or lack of knowledge about new products for the market. Help could be provided through:

- Trade fairs to make new products well-known
- Tax breaks for companies starting up new indigenous fruit enterprises (e.g. India provides a 5-year tax break

#### **Roles of different actors:**

- SMEs
  - Need to articulate their ideas clearly, including outlining their investment budget and their desired returns.
  - Service provider SMEs: There is a role for more entrepreneurs to act as an information portal between SMEs and researchers.
- Academics
  - Setting up a contact point for SMEs is a good start to help SMEs find the right person to help them with their research question.
  - Academics also need to explain clearly to SMEs how research works to avoid false expectations about the speed with which results can be provided.

- One way of establishing links between SMEs and academics is for SMEs to provide placements for students doing dissertation research – this can be beneficial for both parties.
- Indian example of e-learning course which will establish a cohort of Asia trainees who may continue to get support from the teachers of the course as well as having a ready-made network of possible collaborators around Asia.
- Agricultural fairs
- Agricultural shops
- Chambers of Commerce
  - Provide training workshops; exchange tours; support in negotiating with government.
- Governments
  - Providing tax breaks for entrepreneurs
  - Providing funding for new contact points between industry and academia
  - Providing testing facilities for quality control

The plenary discussion noted that community radio has been successful for disseminating information in Bangladesh. There is a need to consider waste issues when promoting processing. We should clearly identify two types of research programme:

- long-term research needs which are often researcher-led and require government funding
- and short-term research needs which can be more responsive and include adaptation of existing technology

#### Day 2: Tuesday, 14th May, 2013

# <u>Technical Session III:</u> Writing research proposals (facilitated by Dr Nazmul Haq and Dr Kate Schreckenberg)

Using the example of a proposal submitted to the EU several years ago, participants examined the work package structure and how this enables partners to work together on an overarching aim but each with a clear individual focus. Participants discussed draft work packages they had been asked to prepare in advance of the workshop. Key ingredients of a winning research proposal were identified as:

- Clear objectives, activities and expected deliverables;
- Information about the fruit (or process) you would work on, and the state of knowledge for that fruit (stakeholders, value chain, indigenous and scientific knowledge) – include references as appropriate and evidence of demand for the research;
- Details of the analysis you intend to do, technologies available at small and medium scale;
- Identification of the local industry that would be available to take part in the research including provision of co-funding and use of the research results;
- Information about potential collaboration with partners from other countries and/or sectors.

#### Technical Session IV: Dissemination Activities

Based on the papers that have been presented over the course of the 5 workshops and the issues raised, several 2-page briefing papers were suggested (with potential lead authors):

- 1. Indigenous fruits for nutrition in Asia an overview of the rationale and findings of the whole project (lead: Dr Kate and Dr Nazmul, Southampton)
- 2. Characterisation of Indigenous fruits (lead: Dr In, Cambodia)

- 3. The importance of genetic variation in wild fruit (leads: Dr Madan (Bangladesh) and Dr Pushpakumara (Sri Lanka))
- 4. Cold storage to improve indigenous fruit marketing (lead: Dr Neeru, India)
- 5. Achieving quality control in the indigenous fruit trade (lead: Dr Phuong, Vietnam)
- 6. Novel bioactive ingredient from indigenous plants: case study of antimicrobial plants extracts (lead: Dr Samira, CIRAD Vietnam)
- 7. Collaborative research on underutilised fruits (lead: Dr Dharmasena, Sri Lanka)

Each policy brief should include:

- 3 or 4 key messages
- Rationale why is this topic important?
- Main text outlining the key issues
- 1 or 2 case study boxes with graphics/pictures
- Concluding paragraph
- Info about additional resources (could be a named contact or a website with more information)

In addition to being a useful resource for policy-makers, the information in the briefs would be helpful for any research proposals we write. Southampton should lead on encouraging partners to add to the draft outlines over the next few weeks.

#### Other dissemination activities:

NagaLaxmi M. Raman, Amity International Centre for Post-Harvest Technology & Cold Chain Management, Amity University, Uttar Pradesh, Noida, India. <u>Integrated e-learning course for SMEs</u> and trainers of Post-Harvest Technology focused on improved marketability of indigenous, tropical and subtropical, fruits and vegetables

Amity University has developed an e-learning course with 26 components for each of 14 crops. The course takes course participants through the whole product lifecycle from production to harvesting, processing and marketing. 8 modules are targeted at SMEs and are available in both English and the local language. The course can be taken by producers or intermediaries with internet access. They are supported by an online forum for group discussions and attend two physical meetings in months 4 and 8. The biggest hurdle in developing the programme is how to monitor the extent to which trainees actually implement the new knowledge they gain. The current cohort consists of 30 participants in South Asia with an additional 20 around the world.

Sri Lanka – Dr Pushpakumara is working on a compilation of information on underutilised species in Sri Lanka through an ICRAF project; 2 volumes are ready and a third is in production. ICRAF could also support Dr Dharmasena to compile what is known about processing of underutilised fruit (particularly recording traditional practices) in Sri Lanka.

The possibility of regular email updates around the network was discussed, to outline progress in submitting proposals and/or dissemination and future exchange activities.

### Day 3: Wednesday, 15<sup>th</sup> May, 2013

Field visits to:

- Gannoruwa A Park, DOA Food, Fruit and Vegetable Processing Center, an ISO certified food industry SME which benefited from technology transfer from the research institute.
- Outlet of an integrated agro-based industry 'Juizees' which sells a range of agricultural inputs as well as fruit and vegetables, and has a juice bar which includes a large range of indigenous fruit in its ingredients.
- Food Research Institute, Department of Agriculture, Peradeniya, Sri Lanka
- Pallekele Industrial Estate a successful case of Fruit Processing after Technology Transfer

#### Appendix 1. List of participants

#### Bangladesh

- 1. Dr Madan Gopal Saha, Chief Scientific Officer, Bangladesh Agricultural Research Institute (BARI), Gazipur 1701, Bangladesh. email: <u>mgs 60@yahoo.com</u>
- 2. Dr Md Atiqur Rahman, Senior Scientific Officer, Bangladesh Agricultural Research Institute (BARI), Gazipur 1701, Bangladesh. email: <u>atiqur\_2004@yahoo.com</u>

#### Cambodia

- 1. Dr Seingheng HUL, Director/Research, Institute of Technology of Cambodia, PO Box 86, Russian Federation, Phnom Penh, Cambodia. email: <u>hul@itc.edu.kh</u>
- 2. Dr IN Sokneang, Vice head of Chemical and Food Technology Department, Institute of Technology of Cambodia, PO Box 86, Russian Federation, Phnom Penh, Cambodia. email: insokneang@yahoo.com

#### UK

- 1. Dr Kate Schreckenberg, Lecturer and co-coordinator for the Centre of Underutilised Crops (CUC), University of Southampton, UK. email: <u>k.schreckenberg@soton.ac.uk</u>
- 2. Dr Nazmul Haq, Emeritus Fellow, University of Southampton, UK. email: <u>N.N.Haq@soton.ac.uk</u>
- 3. Mr Malik Akhter Hamid, Network Technical Facilitator, University of Southampton, UK. email: <u>m.a.hamid@soton.ac.uk</u>

#### India

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- 2. Dr Neeru Dubey, Assistant Professor, Amity Centre for Post-Harvest Technology & Cold Chain Management, Amity University Uttar Pradesh, Delhi, India. email: <a href="mailto:needub@gmail.com">needub@gmail.com</a>

#### Sri Lanka

- 1. Prof. HPM Gunasena, Chairman, Coconut Research Board, Coconut Research Institute, Lunuwila, Sri Lanka. He was the former Executive Director, Sri Lanka Council for Agricultural Research Policy. email: gunasenah@yahoo.com
- Prof. DKNG Pushpakumara, Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka. Phone: 0094714933591; email: <u>ngpkumara@pdn.ac.lk</u>; <u>pkumaralk@yahoo.com</u>

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- 4. Dr KH Sarananda, Head/Food Research Unit, Department of Agriculture, Gannoruwa, Peradeniya, Sri Lanka. Phone: 0094714933591; email: <a href="mailto:ngpkumara@pdn.ac.lk">ngpkumara@pdn.ac.lk</a>
- 5. Mr. Vajira Balasooriya, Department of Agricultural Economics and Business Management, Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka. email: <u>vajirabala@hotmail.com</u>
- 6. Mr. CR Gunawardena, Institute of Postharvest Technology, Research and Development Centre, Jayanthipura, Anuradhapuraya, Sri Lanka.
- 7. Mr. WMCB Wasala, Institute of Postharvest Technology, Research and Development Centre, Jayanthipura, Anuradhapuraya, Sri Lanka.
- Mr. L. Nihal Jayalath and Mr. Anura Weerasooriya, Tropical Health Food (Pvt.) Ltd., Heraliyawala Industrial Park, Malkaduwawa, Kurunegala, Sri Lanka. Phone: 0094773186690; email: <u>nihal.jayalath@yahoo.com</u>
- 9. Mr. H.M.C.D. Herath, "Wimalasiri", Nabiriththa Wewa, Nikadalupotha, Sri Lanka. Phone:0094375629798; 094725586208
- 10. Mr. A.M.T. Chinthana, 601/46/I, Samagi Uyana, Thammannakulama, Anuradhapura, Sri Lanka. Phone: 0094 714851605; email: <u>lankakingsfoods@yahoo.com</u>.
- 11. V & J Industries, Industrial Park, Kundasale, Sri Lanka.

#### Vietnam

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- 3. Dr Pham Huu Yen Phuong, Vietnam. email: Phyenphuong05@yahoo.com

### Appendix 2 Training Workshop Program

### Day 1: 13<sup>th</sup> May 2013 (Monday)

TIME	INAGURAL SESSION	SPEAKER/CHAIR	
10.00-10.30	Registration and Tea		
	Lighting of the oil lamp		
10.30-10.40	Welcome address	Prof. DKNG Pushpakumara	
		Chairman of the Session	
10.40-10.50	Introduction to the workshop	Dr Kate Schreckenberg	
10.50-11.00	Address by Agriculture education Unit	Prof. Buddhi Marambe	
11.00-11.10	Address by Dean/Agriculture	Prof. K Samarasinghe	
11.10-11.20	Address by Vice Chancellor of University of Peradeniya	Prof. Athula Senarathne	
11.20-11-25	Vote of thanks	Dr. KH Sarananda	
	5 Min. Health Break		

11.30-13.30	TECHNICAL SESSION I:	
	ENGAGING SMES IN RESEARCH PLANNING IN PARTNER COUNTRIES	
	Chairman: Prof. HPM Gunasena	
	Rapporteur: Mr MA Hamid/Prof DAN	N Dharmasena
11.30-11.50	Engaging SMEs in research planning	Dr. KH Sarananda
	and research related to fruit and	Prof. DKNG Pushpakumara
	vegetables in Sri Lanka	Prof. DAN Dharmasena
		Mr. CR Gunawardena
11.50-13.00	Engaging SMEs in research planning	Members from partner countries
	and research in other partner	SMEs (Tropical Health Food, Lanka Kings
	countries (Vietnam, Bangladesh,	Food,
	India, Cambodia)	
13.00-13.30	Discussion	
13.30-14.00	LUNCH	
1	1	

14.00-17.00	TECHNICAL SESSION II: COLLABORATIVE RESEARCH WITH SMEs IN PARTNER COUNTRIES Chairman: Prof. HPM Gunasena Rapporteur: Dr. MA Hamid/Prof DAN Dharmasena	
14.00-15.00	Collaborative research with SMEs in Sri Lanka (30 min presentation and discussion) Presentations from partner countries and discussion.	
15.00-15.30	Commercialisation of technology and promote SME: Economic Perspectives and discussion	Mr. Vajira Balasuriya, Department of Agriculture Economics and Business Management
15.30-17.00	A breakout group with SME partners to discuss product development lifecycle and at which point SMEs need research input, and how they go about obtaining it	Facilitated by Dr Kate Schreckenberg and Prof. DKNG Pushpakumara and a few SME members. Group work followed by presentations and discussion
17.00	Closure of the first day	

19.30-22.00 WORKSHOP D	NNER Roof Top, Hotel Topaz,	Kandy
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## Day 2: 14<sup>th</sup> May 2013 (Tuesday)

	TECHNICAL SESSION III: TRAINING	TECHNICAL SESSION III: TRAINING ON HOW TO WRITE RESEARCH PROPSALS	
	Chairman: Mr. MA Hamid		
	Rapporteur: Prof. DAN Dharmas	Rapporteur: Prof. DAN Dharmasena	
TIME	SESSION	SPEAKER/CHAIR	
09.00-10.00	Training in how to write	Dr. Kate Schreckenberg	
	research proposals	Dr. Nazmul Haq	
		Prof. HPM Gunasena	
10.00-10.30	TEA	TEA	
10.30-12.30	Training in how to write winning	Dr. Kate Schreckenberg	
	research proposals	Dr. Nazmul Haq	
		Prof. HPM Gunasena	
12.30-13.30	LUNCH	LUNCH	

	TECHNICAL SESSION IV: DISSEMINATION OF NETWORK ACTIVITIES Chairman: Prof. DKNG Pushpakumara Rapporteur: Prof DAN Dharmasena		
TIME	SESSION		SPEAKER/CHAIR
13.30-15.30	Network	dissemination:	Dr. Kate Schreckenberg
	Presentations	on potential	Dr. Nazmul Haq

	outputs	
	Discussions	
15.30-16.00	ΤΕΑ	
16.00-18.00	Group work to develop various Dr. Kate Schreckenberg	
	dissemination outputs	
18.00	Closure of the second day	

### Day 3: 15<sup>th</sup> May 2013 (Wednesday) Field Visits

TIME	SESSION	SPEAKER/CHAIR/RESPONSIBILITY
08.30-12.00	1. Linking SME with government	Dr. KH Sarananda
	interventions: Hela Bojun (DOA	Rapporteur: Mr. CR Gunawardena
	Initiatives as a success) 5 km from	
	the workshop venue	
	2. Visit to Gannoruwa A Park, DOA	Dr. KH Sarananda
	Food, Fruit and Vegetable	Rapporteur: Mr. CR Gunawardena
	Processing Centers. 5 km from the	
	workshop venue	
	(Tea will be served here)	
	3. Discussion at Juizees (CIC Outlet)	Prof. DKNG Pushpakumara Rapporteur:
	at Peradeniya on technology	Mr. CR Gunawardena
	transfer. 5 km from the workshop	
	venue (Health drink will be served	
	at this location)	
12.00-13.00	LUNCH	
13.00-14.30	Visit to Pallekele Industrial Estate on	Prof. DAN Dharmasena
	success case on Fruit Processing	Rapporteur: Mr. CR Gunawardena
	after Technology Transfer	
	15 km from workshop venue	
14.30-15.00	<b>TEA</b> and Closure of the workshop	Prof. DAN Dharmasena
	and Sightseeing in Kandy and	Prof. DKNG Pushpakumara
	Peradeniya	Dr. KH Sarananda
		Mr. CR Gunawardena