CPD

Working Paper 113

SAARC Food Bank (SFB)

Institutional Architecture and Issues of Operationalisation

Mustafizur Rahman
Estiaque Bari
Sherajum Monira Farin

CENTRE FOR POLICY DIALOGUE

SAARC FOOD BANK (SFB)

Institutional Architecture and Issues of Operationalisation

CPD Working Paper 113

Mustafizur Rahman
Estiaque Bari
Sherajum Monira Farin

Publisher

Centre for Policy Dialogue (CPD)
House - 6/2 (7th & 8th floors), Block - F
Kazi Nazrul Islam Road, Lalmatia Housing Estate
Dhaka - 1207, Bangladesh
Telephone: (+88 02) 9141734, 9141703, 9126402 & 9143326
Fax: (+88 02) 9136579
E-mail: info@cpd.org.bd
Website: www.cpd.org.bd

First Published August 2017

Disclaimer: The views expressed in this paper are those of the authors alone and do not necessarily reflect the views of the CPD.

Tk. 100
USD 7

ISSN 2225-8175 (Online)
ISSN 2225-8035 (Print)

Cover design
Avra Bhattacharjee

C42017_1WP113_TRC

Centre for Policy Dialogue (CPD) was established in 1993 as a civil society initiative to advance the cause of a participatory, inclusive and accountable development process in Bangladesh. Over the last more than two decades the Centre has emerged as a globally reputed independent think tank with local roots and global reach. CPD's two major activities relate to organise multistakeholder dialogues and undertake research programmes which work in a mutually reinforcing manner.

CPD dialogues are designed to address important policy issues and to seek constructive solutions to these problems. In doing so, CPD involves all important cross-sections of the society, including public representatives, government officials, business leaders, activists of grassroots organisations, academics, development partners and other relevant interest groups. CPD focuses on frontier issues which are critical to the development process of Bangladesh, South Asia and LDCs in the present context, and those that are expected to shape and influence country's development prospects from the mid-term perspectives. CPD seeks to provide voice to the interests and concerns of the low-income economies in the global development discourse. With a view to influencing policies CPD deploys both research and dialogue which draw synergy from one another.

CPD's research programmes are both serviced by and are intended to serve as inputs for particular dialogues organised by the Centre throughout the year. Some of the major research programmes of CPD include: *Macroeconomic Performance Analysis; Poverty, Inequality and Social Protection; Agriculture and Rural Development; Investment Promotion, Infrastructure and Enterprise Development; Trade, Regional Cooperation and Global Integration; Climate Change and Environment; Development Governance, Policies and Institutions*; and *Post-2015 International Development Agenda*.

CPD also conducts periodic public perception surveys on policy issues and issues of developmental concerns. With a view to promote vision and policy awareness amongst the young people of the country, CPD is also implementing a *Youth Leadership Programme*. CPD maintains an active network with institutions that have similar interests, and regularly participates in various regional and international fora. At present CPD is spearheading two global initiatives. *LDC IV Monitor* is an independent global partnership for monitoring the outcome of the Fourth United Nations Conference on the Least Developed Countries (UN LDC IV). *Southern Voice on Post-MDG International Development Goals* is a network of 49 think tanks from the developing South which seeks to contribute to the global discussions on Sustainable Development Goals (SDGs) and related issues. In recognition of its track record in research, dialogue and policy influencing, CPD has been selected as one of the awardees of the Think Tank Initiative (TTI) through a globally competitive selection process for two consecutive times.

Dissemination of information and knowledge on critical developmental issues continues to remain an important component of CPD's activities. Pursuant to this CPD maintains an active publication programme, both in Bangla and in English. As part of its dissemination programme, CPD has been bringing out CPD Occasional Paper Series on a regular basis. It may be noted in this connection that since November 2011, the Series has been re-introduced as **CPD Working Paper Series**. Dialogue background papers, investigative reports and results of perception surveys which relate to issues of high public interest are published under this series.

The present paper titled **SAARC Food Bank (SFB): Institutional Architecture and Issues of Operationalisation** has been prepared by *Professor Mustafizur Rahman*, Distinguished Fellow, CPD <mustafiz@cpd.org.bd>; *Mr Estiaque Bari*, Senior Research Associate, CPD <estiaque.07@gmail.com> and *Ms Sherajum Monira Farin*, Research Associate, CPD <sherajum.m.farin@gmail.com>

Executive Editor: *Ms Anisatul Fatema Yousuf*, Director, Dialogue and Communication, CPD
Series Editor: *Dr Fahmida Khatun*, Executive Director, CPD

Authors' Acknowledgements

The authors would like to express their deep appreciation to the UNESCAP South and South-West Asia (SSWA), office, New Delhi, India, for the generous support received in conducting the present study. We are very grateful to *Dr Nagesh Kumar*, who was serving at the time as Head of UNESCAP-SSWA, for his advice and comments in the course of the study. We would also like to register our deep appreciation to *Mr Matthew Hammill*, UNESCAP-SSWA for his helpful comments in preparing the paper. Inputs received from participants of the discussion held in Kathmandu, Nepal on 21 September 2016, prior to the 9th SFB Meeting, are gratefully acknowledged. We would also like to express our sincere thanks to the officials of a number of SAARC countries for their valuable comments on our earlier draft. In this connection, we would like to put on record our deep appreciation of the support extended by *Mr M J H Jabed*, Director, Agriculture and Rural Development, SAARC Secretariat. We would like to take this opportunity also to thank the relevant government officials, experts and representatives of the international organisations who have helped us with data and information, and shared their views on the questions examined in the study. In this context, the authors would like register their sincere thanks to *Mr Md. Badrul Hasan*, Director General, Directorate General of Food, Government of Bangladesh for the cooperation received at various stages of the study. However, the authors alone remain responsible for the views expressed in this paper.

Abstract

In view of the need for an appropriate institutional architecture to address the food security concerns in South Asia, issues of proper operationalisation of the SAARC Food Bank (SFB) have assumed critical importance in the current context. This paper examines the various provisions that guide the functioning of the SFB, and identifies the underlying reasons why this regional arrangement has failed to deliver the expected results. The paper comes up with concrete recommendations to raise the efficacy of the SFB in order for it to service its mandate. These include a proposed formula for critical thresholds that define food emergency situation, modalities for distribution of food from the SFB, maintenance of the foodstock and ensuring quality of the reserves, derestriction of trade in foodgrains, putting in place a dispute settlement mechanism, and options for institutional tie-ups.

Contents

Authors' Acknowledgements *iv*
Abstract *v*
Acronyms *ix*

1. Introduction 1

2. Food Security Situation in SAARC 2

3. Rationale for Collective Food Security Initiatives 7

4. Background, Evolution and Challenges in Operationalisation of the SFB 10

5. Learning and Lessons from Cross-regional Experience 17

6. Recommendations for Operationalisation of the SFB 19

References 24

List of Tables, Figures and Boxes

Table 1: Location-wise Designated Warehouses for SAARC Food Bank 13

Figure 1: GHI 1990 and 2016 and the Inter-temporal Decline 4
Figure 2: Flow of Action of the SFB 12

Box 1: Results of the Meta-analysis 14
Box 2: Operationalising the SFB: A Cross-country Hypothetical Network 21

Annex Table 1: Comparative Scenario of Food Security Status in SAARC and Regional Countries 28
Annex Table 2: Food Security Scores for SAARC Countries 29
Annex Table 3: Ranking of SAARC Countries in Food Security Index 29
Annex Table 4: Percentage of Wasting Children Under 5-Years of Age 29
Annex Table 5: Percentage of Stunted Children Under 5-Years of Age 29
Annex Table 6: Percentage of Underweight Children Under 5-Years of Age 30
Annex Table 7: Production Deficit/Surplus of South Asian Countries in 2013 30
Annex Table 8: Trade Openness of South Asian Countries 31
Annex Table 9: Percentage of Intra-regional Trade to World Trade of the Region 31
Annex Table 10: Intra-regional Trade in Rice among SAARC Countries in 2014 31
Annex Table 11: Intra-regional Trade in Wheat among SAARC Countries in 2014 32
Annex Table 12: Country-wise Bound and Customs Duty on Rice and Wheat 32
Annex Table 13: Food Reserve and Public Food Distribution System of SAARC Countries 34

Annex Table 14:	Current Quantum of Reserve in the SFB	35
Annex Table 15:	Reserve Adequacy Status of the SFB for Different Levels of Production Shortfall of Foodgrains Compared to Previous 3-Years Average (2012-2014)	37
Annex Table 16:	Reserve Adequacy Status of the SFB at Different Levels of Production Shortfall of Foodgrains Compared to Previous 5-Years Average (2010-2014)	37
Annex Table 17:	Reserve Adequacy Status of the SFB at Different Levels of Production Shortfall of Foodgrains Compared to Previous 7-Years Average (2008-2014)	38
Annex Table 18:	Change in Paddy and Wheat Production Compared to Previous 3-Years Average	39
Annex Figure 1:	Coefficient of Variation of Production of SAARC Member Countries	30
Annex Figure 2:	Google Snapshot of the Locations of Warehouses under the SAARC Food Bank	36
Annex Box 1:	Crop Insurance Initiatives in South Asia	33
Annex Box 2:	Draft Guidelines for Price Determination Presented at the 4th SFB Board Meeting	39

Acronyms

AAIB	Agricultural and Agrarian Insurance Board (Sri Lanka)
ADMP	Agricultural Development Master Plan (Maldives)
AERR	ASEAN Emergency Rice Reserve
AFSP	Agriculture and Food Security Project (Nepal)
AFSR	ASEAN Food Security Reserve
AGRIS	Agricultural Information System
APTERR	ASEAN Plus Three Emergency Rice Reserve
ASEAN	Association of Southeast Asian Nations
CARICOM	Caribbean Community
CGAL	Central Grain Analysis Laboratory (India)
CILSS	Permanent Interstate Committee for Drought Control in the Sahel (Selon le Comité permanent Inter-Etats de lutte Contre la Sécheresse dans le Sahel)
CLID	Crop and Livestock Insurance Directive
CV	Coefficient of Variation
CVO	Chief Veterinary Officer
EAERR	East Asia Emergency Rice Reserve
ECC	Economic Coordination Committee (Pakistan)
ECHO	European Civil Protection and Humanitarian Aid Operations
EP	Essential Priority
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Database
FCB	Food Corporation of Bhutan
FCI	Food Corporation of India
FFE	Food for Education
FFW	Food for Work
FGD	Focus Group Discussion
FNSP	Food and Nutrition Security Policy (Bhutan)
FPMU	Food Planning and Monitoring Unit
GFSI	Global Food Security Index
GHI	Global Hunger Index
GHO	Global Health Observatory
GIS	Geographic Information System
GR	Gratuitous Relief
HS (Code)	Harmonized Commodity Description and Coding System
IFPRI	International Food Policy Research Institute
IGMRI	Indian Grain Storage Management and Research Institute
ISFNS	Information System for Food and Nutrition Security
KII	Key Informant Interview
LDC	Least Developed Country
MDG	Millennium Development Goal
MSP	Minimum Support Price
MT	Metric Ton
MoAF	Ministry of Agriculture and Forests (Bhutan)

MoPH	Ministry of Public Health (Afghanistan)
MoU	Memorandum of Understanding
NAP	National Agricultural Policy (Sri Lanka)
NFC	Nepal Food Corporation
NFSA	National Food Security Act (India)
NGO	Non-Government Organisation
NMFB	National Medicines and Food Board (Afghanistan)
NNP	National Nutrition Policy (Sri Lanka)
NTB	Non-Tariff Barrier
OMS	Open Market Sales
OMSS	Open Market Sale Scheme
OP	Other Priority
PASSCO	Pakistan Agricultural Services and Supplies Corporation Ltd.
PDS	Public Distribution System
PFDS	Public Food Distribution System
PMFBY	Pradhan Mantri Fasal Bima Yojana (India)
PPP	Public-Private Partnership
PREGEC	Regional Food Crisis Prevention Network (Réunion Restreinte du Dispositif Régional de Prévention et de Gestion des Crises Alimentaires)
PoA	National Food Policy Plan of Action (Bangladesh)
RESIMAO	West African Market Information System Network (Réseau des Systèmes d'Information des Marchés en Afrique de l'Ouest)
RFNSP	Regional Food and Nutrition Security Policy
RFSP	Regional Food Security Programme
RICBL	Royal Insurance Corporation of Bhutan Ltd.
RLGB	Regional Livestock Gene Bank
RSOC	Rapid Survey on Children
RVB	Regional Vaccine Bank
SAARC	South Asian Association for Regional Cooperation
SAC	SAARC Agriculture Center
SADF	South Asian Development Fund
SAFTA	South Asian Free Trade Area
SAN	Food and Nutrition Security Project (Sécurité Alimentaire et Nutritionelle)
SAP	Early Warning System (Système d'Alerte Précoce)
SAPTA	SAARC Preferential Trading Arrangement
SDF	SAARC Development Fund
SDG	Sustainable Development Goal
SEDMC	SAARC Environment and Disaster Management Centre
SFB	SAARC Food Bank
SFBIS	SAARC Food Bank Information System
SFRP	SAARC Fund for Regional Projects
SFSR	SAARC Food Security Reserve
SIM	Market Information System (Système d'Informations Marketing)
SIMB	Livestock Market Information System (Système d'Information sur les Marchés à Bétail)
SMRC	SAARC Meteorological Research Centre
SSB	SAARC Seed Bank
SSN	Social Safety Net
TCARD	Technical Committee on Agriculture and Rural Development (SAARC)
TPDS	Targeted Public Distribution System
TR	Test Relief

UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
USDA	United States Department of Agriculture
VAM	Vulnerability Analysis and Mapping
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding
WDI	World Development Indicator
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization

1. INTRODUCTION

Whilst it is generally recognised and widely accepted that food security is one of the most fundamental rights of human beings, many countries are still not in a position to guarantee this right to a significant number of their citizens. Evidence suggests, countries with large number of people suffering from high degree of malnutrition, are severely constrained in their quest for economic development (FAO, IFAD and WFP, 2002). As is known, the efforts towards food security at national levels have now been reinforced by global commitments enshrined in the 2030 Agenda for Sustainable Development, where the SDG (Sustainable Development Goal) 1 sets the target to eliminate hardcore poverty[1], and Goal 2 talks of a world with zero hunger[2], by 2030. It is thus not surprising that, addressing food security concerns has received prioritised attention in national strategies of all developing countries.

Data corroborates the observation that South Asia remains one of the most food-insecure regions of the world (FAO, 2015). In the backdrop of the increasing demand arising from a growing population, threats of climate change and changes in production structure, the risk of further accentuation of food insecurity situation is a real one for South Asia (Ahmed and Suphachalasai, 2014). As is shown in Annex Table 1, 60 per cent of the diet in South Asia comes from cereals, roots and tubers (FAOSTAT, 2016). Rice and wheat (referred to as foodgrains in the paper) are the staple food for most people in South Asia. Addressing the rising demand for foodgrains is an ongoing challenge for the policymakers in South Asia. However, it needs to be appreciated that, South Asia has achieved commendable success in rising up to this formidable challenge. According to the head count ratio (at USD 1.90-a-day), poverty of South Asia has declined over the recent past, from 44.6 in 1990 to 15.1 in 2013; and this impressive progress is well-reflected in various dimensions of food security (World Bank, 2016). Notwithstanding this impressive track record in terms of some of the key indicators, South Asian countries hardly have any room for complacency with regard to food security. Food security scores and rankings of the member countries of the South Asian Association for Regional Cooperation (SAARC), as per the Global Food Security Index (GFSI), in fact transmit a cautionary note (Annex Table 2). There is a clear message as to the need for forward-looking strategies to address the attendant concerns. Indeed, recent experiences as regards high price volatility in foodgrains markets and variability in agricultural production originating from climate impact, have added new dimensions to the food insecurity concerns (Ahmed and Suphachalasai, 2014).

This paper seeks to contextualise the current food security scenario in South Asia with a view to operationalising the idea of a collective regional initiative to improve food security in South Asia as embedded in the concept of the SAARC Food Bank (SFB). As would be appreciated, the modality of ensuring food security through regional collective action ought to take as its reference point the dynamics of production, distribution, trade, stock and reserve of rice and wheat. Common topography, ecology and geography, significantly large contiguous border areas, shared risks of trans-border environmental damages of high frequency and intensity, and susceptibility to production shortfall – all these factors add to South Asia's concerns as regards food security. There is also a spatial dimension to this vulnerability emanating from similar nature of calamities and adverse impacts, which reinforces the need for common initiative to tackle the attendant challenges. Since the impacts of disasters and calamities, whether human-made or natural, could transcend national boundaries, and give rise to cross-border problems, there is a justification to take appropriate collective measures to forestall such possibilities. In view of this, an effective response mechanism towards addressing these types of challenges ought to be multilateral, relying on regional cooperation among countries that share a common geography, history and culture, and whose economies are increasingly interconnected (Ingram, Ericksen and Liverman, 2010). In this backdrop, it is pertinent to recall that, the need for

[1]Goal 1: End poverty in all its forms everywhere.

[2]Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

collective endeavours to ensure regional food security, with participation of regional countries, was recognised by the SAARC early on, following which the SFB was established in 2007. At present, the task at hand is to identify an appropriate architecture and modality to enable SFB to service its mandate of helping SAARC member countries to address food-emergency situations through efforts based on partnership and sharing.

In view of the above, the key objectives of the study are to undertake a review of the core provisions informing the SFB initiative, identify the weaknesses that undermine effective operationalisation of the SFB, and to come up with an evidence-informed institutional architecture to raise operational efficacy of the SFB.

In addition to this introductory section, the present paper includes five more sections. Section 2 reviews the current food security scenario in South Asia with a brief overview of the state of production, demand and trade in foodgrains. The section also documents policies pursued by the SAARC countries to attain food security, and reviews public food distribution systems (PFDSs) in place to address food security concerns. Section 3 discusses conceptual issues and the rationale for collective food security initiatives such as the SFB. Section 4 lays out the background, structure, recent developments and challenges as regards operationalisation of the SFB. Section 5 takes a close look at cross-regional experiences in ensuring collective food security with a view to drawing insights in terms of learnings and lessons. The section examines the possibility of replicating some of the pertinent measures in the SFB context. Section 6 comes up with a number of recommendations towards raising operational efficacy of the SFB.

1.1 Research Approach

The paper is based on review of secondary evidence, use of some quantitative exercises, key informant interviews (KIIs), and focus group discussions (FGDs). Review of relevant literature was carried out to glean the needed information from secondary sources which included published materials and relevant documents, agreements, regulations and relevant meeting minutes. Analytical exercise was undertaken by using the most updated secondary data available from the World Development Indicators (WDI), UNCTADstat (statistical database of the United Nations Conference on Trade and Development) and Trade Map; quantitative assessments were based on latest FAO (Food and Agriculture Organization of the United Nations) dataset. KIIs and FGDs were participated by representatives of key stakeholder groups.

2. FOOD SECURITY SITUATION IN SAARC

According to FAO, food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996). As may be recalled, the four dimensions of food security are: availability, access, utilisation and stability. This multidimensional approach to food security takes cognisance of the state of food insecurity, scale of hunger and extent of undernourishment. SAARC members, as was noted earlier, have made significant progress in the context of food security. Historical data and cross-country comparisons have borne this out. Nonetheless, concerns remain as regards ensuring food security on a sustained basis. In spite of commendable progress in areas of poverty alleviation and hunger amelioration, according to the authors' estimation by using the WDI data, about 320 million South Asians live on less than USD 1.90-a-day and an estimated 280 million people remain undernourished. According to the GFSI data, SAARC countries continue to belong to vulnerable category in terms of food security score[3] and ranking. Hence, there are reasons to be

[3]Bangladesh (with score 36.8) belongs the 'Needs Improvement' category; and others [India (with score 49.4), Nepal (42.9), Pakistan (47.8) and Sri Lanka (54.8)] are in 'Moderate' category (Annex Table 2).

concerned. Though there have been improvements in food security scores over the period of 2012 to 2016, rankings of all the SAARC countries were below 65 out of 113 countries (Annex Table 3).

2.1 Dimensions of Food Security: Availability, Access, Utilisation and Stability

No doubt, over the years, quality of diet has improved considerably in South Asia as can be seen in the average protein supply from animal origin[4] (FAOSTAT, 2016). However, cross-regional comparative analysis suggests that, with regard to *availability* dimension, South Asia as a region is behind East Asia and world averages. In terms of average dietary energy supply adequacy, South Asia's status is even lower than Sub-Saharan Africa[5]; South Asia is more dependent on cereals, roots and tubers[6], and consequently, nutrition intake is of a less diverse nature. Except for Maldives, the average protein supply status in other South Asian countries is lower compared to SAARC's East Asian neighbours[7] (Annex Table 1).

The majority of South Asian economies have made decent progress in indicators of *access* – prevalence of undernourishment and depth of food deficit have declined by 7.5 and 50 percentage points, respectively (FAOSTAT, 2016). On the other hand, when one juxtaposes this with the global standing of South Asian countries on food security scores, there are reasons to be cautious (Annex Table 2).

Utilisation pillar reflects socio-economic scenario at the country level – prevalence of wasting, stunting and underweight in children under the age of five years are some of the indicators in this pillar. Point estimate analysis indicates that prevalence of wasting has increased alarmingly for Sri Lanka, and mildly for Bangladesh and Nepal (Annex Table 4). This is suggestive of an acute undernutrition status. South Asia has the highest prevalence of wasting; approximately one in six South Asian children is moderately or severely wasted (UNICEF, 2013).[8] Over the past two decades, all countries in South Asia, except for India and Pakistan, have experienced reduction in the share of children under 5-years of age having a stunted growth (Annex Table 5). Stunting in South Asia was 39 per cent in 2011; it has declined by 22 per cent since 1990 (UNICEF, 2013). Indeed, it is quite alarming to note that, South Asia has about 40 per cent of the children worldwide who are stunted (UNICEF, 2013). Underweight prevalence is highest in South Asia – it is home to 59 million children (out of global 101 million) afflicted by this (UNICEF, 2013). This would mean that more than half of world's underweight children live in South Asia. Within the region, Nepal has shown impressive progress as against the unsatisfactory progress recorded in Bangladesh and Pakistan. Sri Lanka has experienced some deterioration in this respect (Annex Table 6). Indeed, South Asia's progress has been rather slow in meeting the MDG (Millennium Development Goal) 1 indicator of prevalence of underweight children under age five.[9]

Stability indicators do not show a satisfactory progress. There is significant per capita food production variability[10], with Nepal having the highest, followed by Afghanistan and Pakistan. According to the per capita food supply variability criteria, South Asia is indeed way higher than the world average (Annex Table 1). In the context of the present paper, the variability in the production of foodgrains

[4]From 10 g/capita/day in 1993 to 32 g/capita/day in 2010 (FAOSTAT, 2016).

[5]Average dietary energy supply adequacy is 110 and 111 per cent for South Asia and Sub-Saharan Africa, respectively – far below than that of the world average (123 per cent).

[6]Sixty per cent of dietary energy supply in South Asia is from cereals, roots and tubers (relatively high when compared with the 52 per cent for the world).

[7]Average protein supply in South Asia is 61 g/capita/day (lower than that of world average – 79 g/capita/day; and severely lower than that of East Asia average – 94 g/capita/day).

[8]India has more than 25 million wasted children, and thus contributes to the alarmingly high prevalence of wasting in South Asia (UNICEF, 2013).

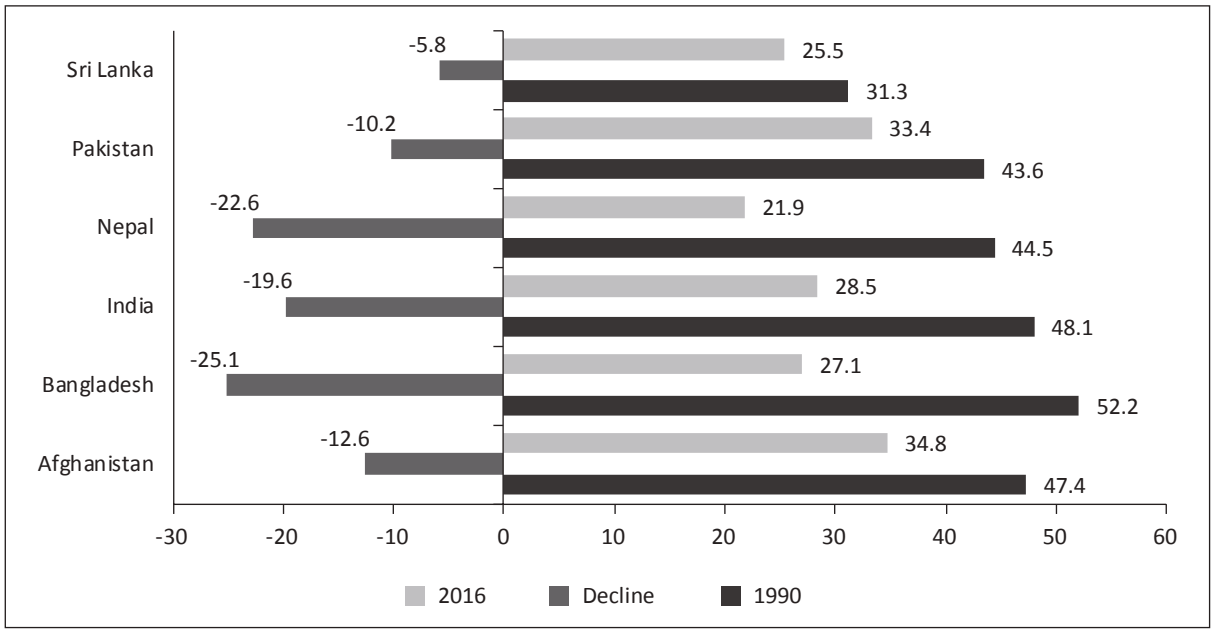
[9]MDG 1: Eradicate extreme poverty and hunger – Target C: Halve the proportion of people who suffer from hunger between 1990 and 2015 (www.unmillenniumproject.org/goals/).

[10]Defined by the FAO as the standard deviation of the net food production value in constant prices divided by population.

is of significant relevance. The coefficient of variation (CV)[11] of production suggests that India (11.5 per cent) has the least variability in the foodgrains production, followed by Pakistan (14.1 per cent), while Afghanistan has the highest (36.4 per cent) variability[12] (Annex Figure 1). The variability in the production of foodgrains over the years originates from a number of factors including climatic conditions. Countries with heterogeneous climatic condition are found to be in a better position from the perspective of intra-country agricultural risk pooling. It is understandable that countries with higher fluctuations in foodgrains production tend to need relatively more safeguards and safety measures including recourse to food reserves such as the food banks. However, the challenge as regards food security concerns is that the impacts are often not confined to only the affected countries, but have a tendency to spill over to the neighbouring countries. There is, thus, a need for concerted efforts to address the attendant concerns through collective initiatives. In view of this, SFB could provide a framework to pool the risks of higher variance in foodgrains production within the SAARC region and help to mitigate climatic impact variability both within and across countries in the SAARC region.

According to the 2016 Global Hunger Index (GHI)[13] published by International Food Policy Research Institute (IFPRI), Pakistan and Afghanistan have GHI scores of 33.4 and 34.8, respectively, which is 'alarming'. Nepal has the lowest GHI score, showing impressive improvement. Bangladesh experienced the steepest absolute decline in its GHI score – more than 25 points, as shown in Figure 1. Apart from these two countries, other South Asian countries have made only slow progress in hunger reduction (Grebmer *et al.*, 2015). South Asia's 2016 GHI score is 29 after declining by more than 23 per cent relative to the 2010 GHI score.

Figure 1: GHI 1990 and 2016 and the Inter-temporal Decline



Source: Authors' calculation using data from the International Food Policy Research Institute (IFPRI).

[11]CV of production given by the standard deviation of production divided by the mean and expressed as a percentage, is a measure of instability in production. A high CV implies high instability in production relative to the average size of production over the corresponding years, and thus represent higher vulnerability to food insecurity.

[12]Other SAARC members such as Bangladesh, Sri Lanka and Bhutan have CVs higher than 20 per cent. As foodgrains production is dominated by the production in India and Pakistan, average regional variability is about 12.5 per cent.

[13]The 2016 GHI was calculated for 117 countries for which data are available for four indicators – percentage of the children who are undernourished, wasted, stunted and the percentage of children who die before the age of five. The index ranks countries on a 100-point scale with 0 being the best, and 100 being the worst. Scores of 9.9 or lower denote low hunger; scores between 35 and 49.9 denote alarming hunger.

In the SAARC region, improvement is observed under three (out of the four) pillars – availability, access and stability. Progress has been inadequate under the utilisation pillar, as was noted above, in Nepal and Bangladesh in particular. A review of relevant data for the last two decades indicates that Pakistan and Afghanistan have registered limited progress in addressing food insecurity (FAOSTAT, 2016). The record within countries at sub-regional levels has often been wanting, even when achievements at national levels have been satisfactory. Floods and droughts are the major reasons. This pattern, as also is found from the following discussion on the state of production, demand and trade of foodgrains in South Asia, underscores the need for region-wide cooperation beyond national, sub-national and local levels in addressing the food security concerns.

2.2 State of Foodgrains Production, Demand and Trade in South Asia

According to the FAO statistics, in 2014, South Asia alone produced 30.4 per cent, 17.9 per cent and 3.3 per cent of global production of rice, wheat and maize, respectively. As per authors' calculation, South Asia as a region is a net importer of foodgrains, with India and Pakistan being the only two net exporting countries (Annex Table 7). In terms of adequacy of food at the disposal of citizens, Bangladesh, India and Pakistan are the three countries with food surplus. Afghanistan, Nepal and Sri Lanka have deficit in foodgrains availability. Bangladesh is a net importer of foodgrains, despite having a surplus amount of rice production. India's share in production of foodgrains is understandably the highest in the region.

It is interesting to note that, though South Asian countries have opened up their economies significantly over the past years, as evidenced by the relatively high degree of openness (Annex Table 8), intra-regional trade of the SAARC countries has remained at very low levels, at about 6.2 per cent of their global trade[14] (Annex Table 9). Major observations from the analysis of intra-regional trade in rice and wheat among and between the SAARC countries are the followings: India and Pakistan are major exporters of foodgrains in the region; while majority of SAARC members have significant trade in foodgrains with India, Afghanistan's trade is mostly with Pakistan (Annex Tables 10 and 11).[15] To understand the trade dynamics of the South Asian region relating to foodgrains, it is also important to realise that these countries have, in general, pursued a protectionist import policy[16] (Annex Table 12). The nature of movements in foodgrain trade in the region has testified to a number of points that are pertinent for the subsequent discussion on the SFB: *first*, trends of trade testify to the presence of both foodgrain surplus and foodgrain deficit countries within the region. *Second*, surplus/deficit status changes in view of production performance. *Third*, lead-time and transport bottlenecks remain areas of much concern. *Fourth*, there is a pricing mechanism for foodgrains through trade, and this could serve as a reference point for the purposes of payment in operationalising the SFB.

[14]The intra-regional trade among SAARC countries (average for the period of 2011-2015) was significantly lower compared to 25.4 per cent and 35.5 per cent intra-regional trade, respectively, for countries in Association of Southeast Asian Nations (ASEAN) and ASEAN Plus Three (ASEAN countries plus China, Japan and South Korea), as shown in Annex Table 9.

[15]Few highlighting points for intra-regional rice trade are: (a) India and Pakistan are net exporters of rice in this region, while others are net importers; (b) India exports rice to all the member states of SAARC with the largest amount going to Bangladesh (7.8 per cent of India's total export); (c) Pakistan exports rice mainly to Afghanistan in South Asia (5.3 per cent); share of Bangladesh (0.2 per cent), Maldives (0.1 per cent) and Sri Lanka (2 per cent) are not significant; (d) Sri Lanka exports about 5 per cent of global rice export to Maldives; (e) Nepal and Maldives are dependent on India for rice import (99.9 per cent and 80.9 per cent, respectively); (f) Afghanistan imports 92.9 per cent of total rice import from Pakistan. Similarly, few highlighting points for intra-regional wheat trade are: a) India and Pakistan are net wheat exporters in the region, while others are net importers; b) Afghanistan is mostly dependent on Pakistan for import of wheat (80 per cent); c) India exports 34 per cent of its total wheat to Bangladesh; d) Nepal is overwhelmingly dependent on India for wheat import; e) Other South Asian countries including Sri Lanka, Bhutan and Maldives are relatively more dependent on East Asian countries for import of wheat.

[16]In FY2015-16, Bangladesh, India and Pakistan have raised the import duty on foodgrains. At present, in July 2017, a 10 per cent import duty is in place in Bangladesh for import of rice. The aim is to give some protection to farmers. Export of aromatic rice has been allowed by Bangladesh, but for stipulated time only. In 2016, the Economic Coordination Committee (ECC) of the Government of Pakistan has lifted the ban on import of wheat and wheat products. At the same time, the Pakistani Government imposed a 25 per cent regulatory duty with an aim to protect local farmers from declining wheat prices. Similarly, to protect the interest of the farmers, Government of India has decided to continue to levy import duty equivalent to the bound tariff rate for rice and wheat grains in FY2016-17.

2.3 Policies and Incentives to Improve Food Security Situation in South Asia

All the SAARC countries have well-formulated policies[17] for addressing food and nutrition concerns and reducing market uncertainties. Common core elements of these policies are: raising agricultural productivity, food distribution among vulnerable groups, development of functional market structure, adoption of sustainable technological options, enhanced investment in agricultural research, and trade and tariff policies relating to foodgrains. Several crop insurance policies are in place across the SAARC countries to provide a safety net for foodgrains-producing farmers against possible crop losses (Annex Box 1). A regional harmonised crop insurance policy could be considered in this regard, but this will call for detailed working out of the policy and its implementation.

Agricultural policies pursued in SAARC countries aim to create a conducive and stable environment for availability, accessibility and utilisation of food. Nutrition security is specifically addressed through the various safety net programmes in operation (school-feeding programmes, food security allowances, foodgrains entitlement, etc.), and awareness programmes (promoting diversified diet, increased nutrient intake, improved feeding habits, etc.). In recent years, issues dealing with sustainable agricultural development and agricultural practices are being given high prominence in relevant policies of SAARC countries. All major crop-producing South Asian countries (India, Pakistan, Bangladesh and Sri Lanka) maintain national buffer stocks through market-based procurement policies. Procurement prices for foodgrains are fixed on a regular basis by assessing the market demand and supply situation (production plus the stock), global market scenario, and by balancing interests of consumers and producers. For example, in FY2015-16, during the harvest season, India[18] (for rice and wheat), Pakistan (for wheat), Bangladesh[19] (for rice and wheat) and Sri Lanka (for rice) have gone for increasing domestic procurement prices.

Designated authorities and centralised systems for foodgrains distributions are in place in most SAARC countries. Review of national documents and secondary information suggests that all SAARC members have well-functioning PFDS with built-in networks, storage facilities, and entry and exit mechanisms for foodgrains (Annex Table 13). This is seen as a critically important strategy by all regional countries. Concerned institutions/departments aim to make foodgrains economically and physically accessible to disadvantaged groups of population through PFDSs. The main idea is to procure and store foodgrains and other essential food items during the harvest time, then release and distribute those in times of emergency or scarcity, at affordable (or lower-than-market) prices. PFDS along with social safety net (SSN) programmes, are geared to stabilising consumption, supporting producers, controlling price volatility, and eventually ensuring food security. The PFDS-incorporated systems need to be institutionalised and digitised to make these capable of tackling demand surges, price spikes and supply shortfalls. Annex Table 13 summarises salient features of the PFDSs in SAARC countries. What transpires from this summary is that, all the SAARC countries have the basic architecture of food distribution systems in place. Their presence is important from the perspective of the subsequent discussion on operationalising the SFB, as the PFDSs could play a critically important role in the distribution mechanism under the aegis of the SFB which has been proposed.

The above discussion on the current food security scenario and the state of production, demand and trade in foodgrains in South Asia underpins the need for a regional collective initiative to reduce

[17]Bangladesh: National Food Policy Plan of Action 2008-2015 (PoA 2008), National Food Policy (2006); Bhutan: Food and Nutrition Security Policy of the Kingdom of Bhutan 2014 (FNSP 2014); India: National Food Security Act 2013 (NFSA 2013); Maldives: Agricultural Development Master Plan 2006-2020 (ADMP 2006); Nepal: Agriculture and Food Security Project's Country Investment Plan (AFSP 2010); Sri Lanka: National Agricultural Policy (NAP-SL) and the National Nutrition Policy 2010 (NNP 2010).

[18]Government of India decided to end levy in rice procurement system from 2015-16 (October-September) marketing year to ensure additional rice availability in the open market and reduce food inflation.

[19]Government of Bangladesh has asked for ensuring 12.5 per cent protein content on the part of exporters to ensure foodgrain quality and food safety.

vulnerability to food insecurity. The prevalent policies and incentive mechanisms and the PFDSs in place provide some idea as to what extent South Asia is equipped to address food security concerns, and help to contextualise the rationale for the proposed collective food security initiatives discussed in the next sections.

3. RATIONALE FOR COLLECTIVE FOOD SECURITY INITIATIVES

This section lays out the main challenges confronting food security in South Asia. The discussion focuses on measures to improve food security in the region through collective food reserves. In this connection, the section deals with issues and challenges in the context of operationalisation of the SFB and reviews initiatives to ensure food security in the SAARC region.

3.1 Challenges to Food Security in South Asia

Households below the poverty line tend to suffer from endemic food insecurity. However, high price volatility and variability in agricultural production have the power to make millions of others vulnerable, who, under normal conditions, would generally be food-secured. Vulnerability, thus, may be thought of as a possibility when even a non-poor, food-secure household could find itself falling into the poverty trap with no, or inadequate, access to food. Agricultural production generally tends to follow seasonal trends, which at times, is interrupted by extreme climatic conditions or natural disasters; abrupt shifts in inputs prices also contribute to output price volatility; demand and supply mismatches could equally affect prices of foodgarins. Weak infrastructure and imperfect markets could accentuate the situation (Ahmed and Suphachalasai, 2014). Susceptibility to adverse climate change impact, loss of arable lands, global temperature rise, increase in sea level, changes in soil salinity, and high acidity in rainfall affecting soil conditions are some of the threats and risks which are emerging as new disquieting elements that can potentially undermine food security in South Asia. Worldwide, the impact of global warming and environmental degradation are having implications that go beyond countries and regions. Due to common topography, ecology and geography, and common border areas, South Asian countries are at risk of being affected by adverse implications more than many other regions. In view of this, the need for cooperative initiatives to address the challenges have never been so urgent.

3.2 Measures to Address Food Insecurity and their Feasibility in the context of South Asia

Tackling food security-related challenges within countries call for appropriate support to the farming sector for growth of both production and productivity, as also for measures towards better food availability and access. This can be ensured through fiscal-financial policies, regulatory mechanisms and institutional initiatives favouring production, distribution, marketing, input and output support. Other supports could be in the form of insurance policies which include yield-based crop insurance, weather-based crop insurances, livestock insurances and micro-insurances. Incentives and interventions favouring production, storage and marketing policies need to be appropriately deployed towards these. Success of insurance tools will depend on the locality-specific and community-sensitive designs, minimisation of risks, and adoption of reliable, reasonable and sustainable pricing mechanisms (including government subsidies) (Raju and Chand, 2007). Many SAARC countries are pursuing many of these policies with varying degrees of success (Annex Box 1). However, past experience shows that food security-related concerns remain endemic in South Asia. This calls for collective action at the regional level.

Freer cross-border movement of foodgrains could be an important vehicle to smoothen horizontal surplus/deficit gaps among countries of the region. However, as evidence suggests, in times of national crisis, be it originating from production shortage, or price volatility, movement of foodgrains across

borders get disrupted. One of the key reasons of food insecurity emanates from price volatility. Recent experience of the global food crisis of 2007-08 demonstrates that reliance on market mechanisms alone is not adequate to ensure regional food security in times of crisis (Belesky, 2014). Dependency on global markets for staple foods proves to be largely ineffective in the face of outright export bans, minimum export prices, fiscal-monetary policies to incentivise and disincentivise trade (as may be needed), and other non-tariff barriers (NTBs) that tend to be put into action with a view to ensuring national food security by major net exporting countries. Oftentimes, such policies tend to aggravate an already volatile situation and unsettle global foodgrains market. For instance, in the wake of 2007-08 global food crisis, many foodgrains-exporting countries such as Thailand, Vietnam and India had taken measures in an attempt to reduce risks, assuage apprehension of the populace and ensure stability in the domestic market. On the other hand, importing countries had to encounter a situation where supply of foodgrains in the world market was severely constrained.[20] As a consequence, it was the marginalised sections of the society which suffered the most (Dawe, 2010). In this backdrop, for a production-deficit and importing country, relying solely on trade of foodgrains in times of emergency proved not to be a viable option from the perspective of ensuring food security. It is to be noted that even in normal times, trade in foodgrains is adversely impacted because of transport and trade facilitation-related constraints that lead to delays and cost escalation (Annex Table 8). As is known, during periods of food shortages and natural disasters, speed of foodgrains delivery is of paramount importance. Thus, proximity between supply-demand locations is of high importance. During emergencies, time needed to ensure access to foodgrains could mean the difference between life and death. For example, Bangladesh, one of the net food-importing countries in SAARC, needs two to three months of turnaround time (depending on the distance) to import foodgrains from abroad, mostly from Thailand, Vietnam or Russia through international tender. Importing foodgrains from most competitive source during times of crisis is not a viable option for an importing country in need of urgent access to food supply. Hence the need for mechanisms such as the SFB.

Policies to mitigate price risks in general include minimum support prices (MSP) through government procurement policies, open market sales (OMS), farm-income insurances, etc. MSP is widely practiced in SAARC countries through which farmers are provided some protection from fall in prices of foodgrains during harvesting season. This is generally used to replenish government food stocks. OMS is generally carried out, by using government stocks, to stabilise market prices of foodgrains. Farm-income insurance, based on revenue, determined by current yield and current market price, is a mechanism which, however, is not common in South Asia. Price stabilisation funds work as savings account whereby government contributes during distress years and farmers contribute during bumper production years, and both parties share the contributions equally during normal years. This is intended to mitigate income-risks of farming. Commodity futures markets and contract-farming are also there in some SAARC countries (Dummu, 2009). Farmers are able to hedge risks by taking a position in the futures markets and insuring against price fluctuations. However, adequate regulatory measures are required to safeguard farmers' interest against possible speculative behaviour in these markets.

Providing some form of insurance to farmers would incentivise investment in the farm sector in the medium- to long-term. Measures include maintaining physical and virtual reserves, and helping farmers to predict market price movements. This works against hoarding and speculation in times of price volatility by means of future short sales. One note of caution is that, aggressive speculation in the agricultural futures market could have adverse implications for price stability. Some SAARC member countries such as India has commodity exchange markets (future selling and buying) to smoothen

[20]One has to keep in mind that the traded amount of foodgrains, particularly of rice, as share of total global production, unlike many other commodities, is rather small (for rice this was about 9 per cent in 2015). Consequently, any shortage in the global tradable supply tends to give rise to disproportionate and knee-jerk response in the form of policy measures on the part of government in anticipation of any speculative behaviour in the market.

price volatility. However, as was noted, the danger is that such markets could also instigate speculation in foodgrains market and undermine the cause of price stability for which such mechanisms are put in place in the first place. The time for SAARC-wide commodity market has perhaps not yet matured. The other option is virtual reserves to reduce the risks of speculative attack in the food commodity markets to guard against possible future price spikes. Virtual reserves are helpful in terms of keeping prices closer to levels suggested by the long-run market fundamentals determined by supply and demand (von Braun and Torero, 2009). The main challenge in designing an effective virtual reserve mechanism for South Asia is that, none of the member states has adequate control over the foodgrains market which would allow them to influence the global market, and thus influence direction of global price movements. For South Asia, this type of price-stabilisation mechanism may have some merit at the country level, but regional-level virtual reserves are unlikely to be effective.

It is reckoned that South Asia is not yet ready to put in place the aforesaid measures on a region-wide scale. One reason is lack of commercialisation as regards foodgrains – agriculture is dominated by small-holding farmers, relatively small share of production is marketed. However, there is justification for introduction of crop insurance and reinsurance (e.g. weather index-based insurance scheme) on the basis of pilot projects. Presence of required social and economic infrastructure, technology-driven mechanisms, coordination between statistical organisations, and bureaucracy and political willingness to develop region-wide risk management tools are necessary pre-conditions for putting in place such regional systems. SAARC countries should consider pursuing some of the aforesaid initiatives with a view to ensuring long-term food security of the region.

3.3 Relevance of Food Reserves

Food reserves are geared to protecting consumers from possible adverse impacts of price volatility, and is a widely practiced procedure of institutional intervention across countries and regions. Most common of such forms are: (a) Food Emergency Reserves with an objective to guarantee availability, accessibility and utilisation of food in situations of natural disasters or external shocks; and (b) Price Stabilisation Reserve which involves buying foodgrains through future short sales when prices are low, and selling at a reduced rate when prices are high in the market (Briones, 2011). For instance, national food reserves – or buffer stocks – are built up through domestic procurement and imports, and are intended to influence price transmission from international to domestic markets and deal with inter-seasonal price fluctuations.

In view of the emergent food security situation in South Asia, the idea of the SFB was mooted as a practical step to put in place an institutional architecture to address challenges originating from production instability and price volatility, through collective and cooperative initiative and action. There is a wide recognition in relevant literature that, regional food reserves could play an important role, in parallel with local (as also international) reserves, in alleviating food insecurity in emergency situations and times of crisis (Toyoda and Suwunnamek, 2011). Historically, stockpiling of agricultural commodities – particularly staple grains – has played an important role as a buffer to address likely adverse impact of natural disasters, calamities, seasonal discrepancies and market turbulences (Murphy, 2009). Such food reserve could function as a safeguard mechanism to tackle after-effects of major production failures and global/local price upsurge and trade restrictions, in the backdrop of the inelastic nature of demand for staple foodgrains. The economic rationale of having regional food reserves includes taking advantage of economies of scale and enhanced scope for price stabilisation through access to greater reserves, balancing demand-supply mismatches, and wider scope of supply and distribution systems within particular regions. Such reserves could function as an emergency food supply which could help to speed up food assistance response and enhance outreach to the needy. Emergency food reserves are aimed at making food available to vulnerable groups in times of crisis; their objective is

to function effectively without disrupting regular private market operations. Food stocks, therefore, do appear to be a potentially effective means of protecting poor and vulnerable households from low food availability and high food prices (Gilbert, 2011; Curtis, 2014). Price stabalisation and government buffer stocks play an important role in food import-dependent countries (von Braun and Torero, 2009; De Castro *et al.*, 2013). Thus, the issue of a collaborative approach to safeguard food security is both relevant and important.

3.4 Regional Efforts towards Food Security in South Asia

It is pertinent to recall that a number of collaborative steps have been put in place to improve food security situation in South Asia. A majority of these initiatives were taken with the objective of promoting the interests of agriculture sector, with the aim of enhancing production of foodgrains. Some of these initiatives related to setting up of Technical Committee on Agriculture and Rural Development (TCARD), Inter-Governmental Core Group on Agriculture Research, Extension and Farmer Linkages, Chief Veterinary Officers (CVOs) Forum, SAARC Agriculture Center (SAC) and SAARC Seed Bank (SSB). Regional Food Security Programme (RFSP) was launched which included SAARC regional food security projects. Seven projects were designed during 2008-10 as part of this, which focused on promotion of food safety, control of trans-boundary animal, aquatic and plant diseases, enhancement of agricultural productivity, promotion of balanced use of agricultural inputs, and post-harvest value chain development in South Asia. In a major policy initiative, SAARC Development Fund (SDF) was established in 2010 which takes its roots from the South Asian Development Fund (SADF), the SAARC Fund for Regional Projects (SFRP) and SAARC Regional Fund. SDF at present is implementing nine priority projects to improve food security[21] (SAARC Secretariat, 2016b).

At the 18th SAARC Summit, the Heads of member states agreed to increase investment, promote research and development, facilitate technical cooperation, and apply innovative, appropriate and reliable technologies in the agriculture sector for enhancing productivity to ensure food and nutritional security in the region. The leaders also underscored the importance of promoting sustainable agriculture (SAARC Secretariat, 2014). Effective operationalisation of the SFB was to be complemented by operationalisation of the SSB, Regional Vaccine Bank (RVB) and the Regional Livestock Gene Bank (RLGB). These would then serve as a platform to develop science-based strategies for collective response to threats and challenges and global shocks relating to food security, and to realise opportunities based on ground realities in the SAARC countries.

4. BACKGROUND, EVOLUTION AND CHALLENGES IN OPERATIONALISATION OF THE SFB

Following section reviews the background of the SFB initiative, presents the developments with regard to the SFB over time, and articulates the challenges in operationalising the SFB.

4.1 Background of the SFB Initiative

As may be recalled, the SAARC Food Security Reserve (SFSR), which predates the SFB, was established in 1987 as a collective endeavour to address the concerns of food insecurity in South Asia. However, the initiative faced implementational challenges owing to a number of reasons: (i) structural flaws; (ii) lack of specific provisions regarding financing of the costs involved; (iii) absence of guidelines to attain the objectives; (iv) absence of an appropriate monitoring authority to supervise, execute and follow up the agreed activities; and (v) failure of net food-importing countries to contribute to the reserves to the extent needed (Mittal and Sethi, 2009; Rahman and Khaled, 2012; Raihan, 2011; Pant, 2014). As a consequence, the SFSR did not get off the ground. The SFSR initiative was put in place before the

[21] Information has been retrieved from: http://www.saarc-sec.org/

SAARC Preferential Trading Arrangement (SAPTA) and the South Asian Free Trade Area (SAFTA). The idea driving the SAPTA and SAFTA was that easing of movement of foodgrains across borders (through preferential market access) would enhance access to foodgrains through better market mechanism. This would smoothen market demand and supply, and consequently lead to lesser price volatility across regional countries.[22]

However, it was felt that there was a need to undertake a dedicated initiative, particularly in view of the adverse climate change impacts afflicting many South Asian countries, the growing population size, demographic dynamics and accelerating pace of loss of arable lands in this region. Thus, two decades after the setting up of the SFSR, the decision was taken to establish the SFB at the 14th SAARC Summit held in Islamabad in 2007. The Agreement came into force in October 2008.[23]

The objectives of the SFB as stated in the Agreement are:

- Act as a regional food security reserve for the SAARC member countries during both normal time food shortages as also in view of emergencies;
- Provide regional support to national food security efforts;
- Foster country partnerships and regional integration;
- Solve regional food shortages through collective action.

SFB's evolving mandate includes: (i) inclusion of food shortage as an eligibility criteria for withdrawal of foodgrains in addition to emergency; (ii) specification of procedures regarding withdrawal and release of foodgrains; (iii) clear indication of the amount of reserve to be earmarked; (iv) withdrawal provisions in consideration of humanitarian grounds; (v) specific requirements in maintaining quality of foodgrains; (vi) instructions for proper storage; and (vii) guidelines on price negotiations (Rahman and Khaled, 2012; Pant, 2014).

4.2 Structure of the SFB

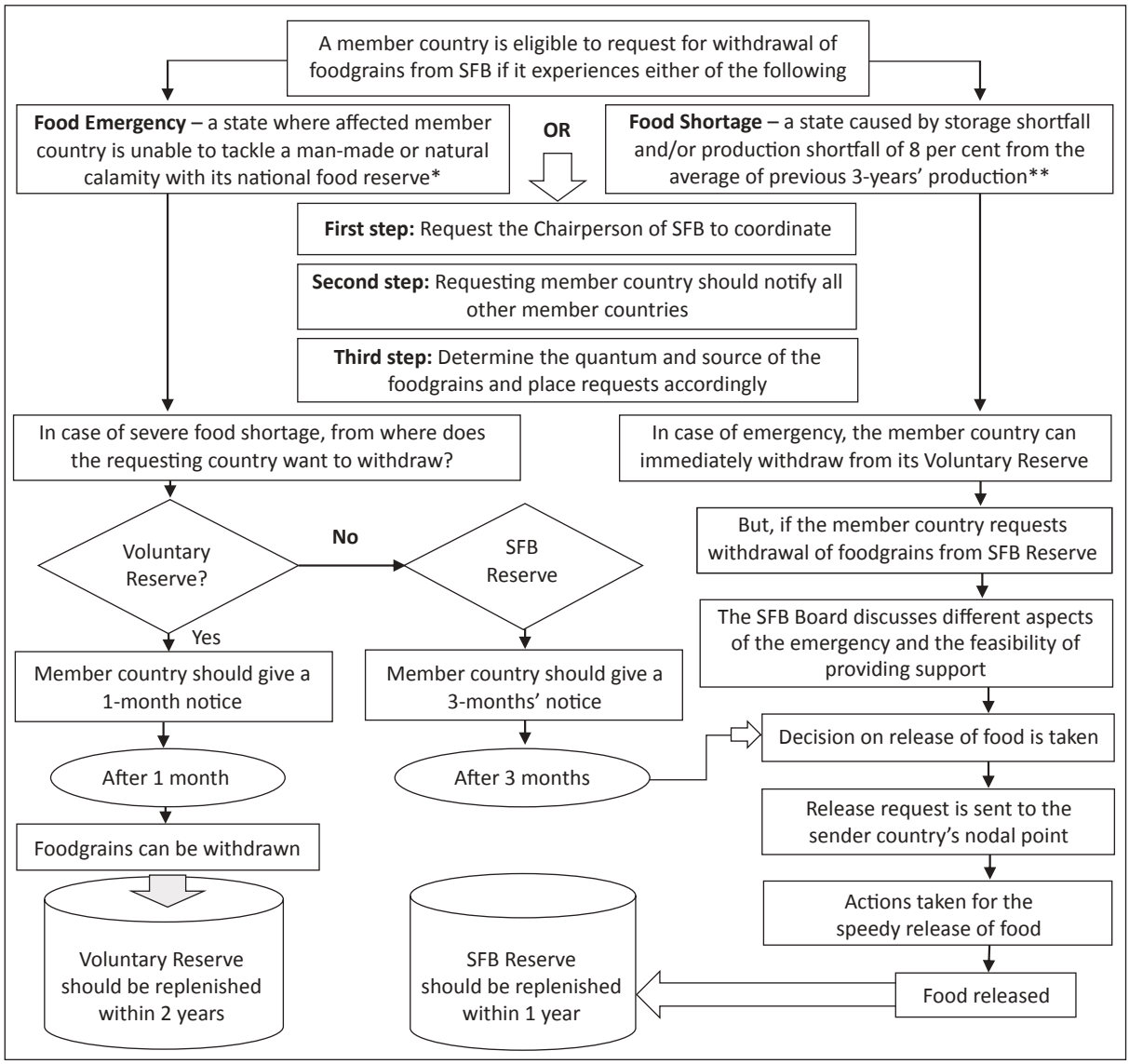
The Agreement on establishing the SFB recognises the importance of regional and sub-regional collective self-reliance and risk management with respect to food security as a means of combating the adverse effects of natural and man-made calamities. The Agreement includes 16 articles that articulate the mandate regarding different aspects of operation of the SFB. SFB is administered by the SFB Board members, who meet annually, and designates a Chairperson based on the principle of rotation among member countries. The Board undertakes periodic review and carries out an assessment of the prevailing food situation. The Board is tasked with dissemination of results of the periodic assessments, analysis and circulation of information, investigation of long- and short-term implications of policies, monitoring of implementation of various provisions of the Agreement, and development of guidelines for price determination. SFB delivery mechanism requires the member countries to keep stocks ready for access in times of food crisis so that transfers to the concerned member country in need could be made as speedily as possible, and also in a cost-effective manner. As per the Agreement, godowns are to be earmarked near border areas so that fastest possible transportation is possible. The stock in the godowns are to be rolled over every three months to avoid deterioration of quality.

[22]With an objective to promote intra-regional trade and economic cooperation, SAARC members signed the SAPTA in December 1995. SAPTA did not have significant impact in terms of deepening intra-regional trade because of the limited preferential trade coverage granted by member countries to each other. According to a World Bank report of 2004, on average, SAPTA covered only 8.4 per cent of import tariff lines from non-LDCs (least developed countries) and 6.2 per cent in case of imports from LDCs. SAPTA was followed, as is known, by signing of the SAFTA in July 2006. According to SAFTA, non-LDCs were required to lower the custom tariff below 5 per cent by 2013, and the rest of SAARC member countries by 2016 (SAARC Secretariat, 2016a). However, there were long sensitive lists that included many tradable agricultural items; many NTBs also continued to inhibit intra-regional trade. Though the sensitive lists are currently being reduced in a phased manner, through rounds of negotiations, the pace of progress is rather slow.

[23]On 7 January 2013, Afghanistan, as the last member state, signed on the Agreement.

Furthermore, member countries are allowed to keep voluntary reserve of any amount at any time in whichever place they deem feasible. Storage facilities are to be supervised and monitored to preserve the standard quality of foodgrains as specified in the Agreement. These reserves were to be checked periodically, and if needed, the reserve has to undergo a turn over. The issues presented to the Board are to be discussed collectively and decisions are to be taken based on consensus. Each country is to have a designated 'nodal point' who would be responsible for administering the operations of the SFB at the national level; these officials are the national focal points who are entrusted with the task of making and receiving requests for foodgrains. Nodal points were first finalised at the 2nd Meeting of the SFB Board. Relevant contact details of these focal persons are updated and circulated at the Board meetings. Costs incurred in the operation of the SFB is to be financed by the SAARC Secretariat budget. The SFB has no provision to allow direct interactions with private sector importers; they may, however, contact the respective national nodal points to initiate negotiations or transactions with the private sector. A pictorial presentation of the procedural flow of actions as regards eligibility, withdrawal, release and replenishment of foodgrains is provided in Figure 2.

Figure 2: Flow of Action of the SFB



Source: Prepared by the authors based on information gleaned from the SFB Agreement.

Note: *At the 9th SFB Board Meeting it was agreed that 'food emergency' will be replaced by 'emergency'.

**The provision has been modified with the deletion of the trigger criteria (8 per cent production shortfall from the average of previous 3-years' production). However, these amendments are to be approved at the next meeting of the Council of Ministers.

4.3 Developments and Amendments

Since the establishment of the SFB, the Board members have met for nine times. The most recent meeting (the 9th SFB Board Meeting) was held in Nepal on 21-22 September 2016. In the course of these meetings, members have taken a number of decisions including updating of the list of respective nodal points, amending a number of clauses, developing a central information system, and adding new quality control standards to the ones that were originally proposed in the Agreement. A brief summary of the amendments and addition of provisions is presented in this section.[24]

4.3.1 Increased Quantum of Food Reserves

Initially, during the 1st Meeting of SFB Board in Colombo in 2008, members agreed to have a reserve of 243 thousand metric tonnes (MT) for the SFB. Later, as per endorsement at the 36th Session of the Standing Committee, it was agreed at the 3rd SFB Board Meeting that the quantum of reserves would be doubled. The proportional contributions to be made by member countries was decided at the 4th SFB Board Meeting and later the information was shared at the 7th Meeting in 2014. As would be expected, India's contribution was the largest (63 per cent), while Maldives and Bhutan contributed the lowest (0.1 per cent) (Annex Table 14). In the reserve allocation, rice accounts for 60 per cent, mostly contributed by India and Bangladesh, while share of wheat was 40 per cent. Sri Lanka's reserves include only rice and Afghanistan's reserves include only wheat. The relative shares of rice and wheat in the contributions made by Bhutan, Maldives, Nepal and Pakistan are yet to be known.

4.3.2 Information Update on Storage

Detailed information as regards the quantum of reserve, godowns/storage facilities and locations was first presented at the 2nd Meeting of the SFB Board. At the 9th Meeting, Bhutan, Maldives and Nepal have shared detailed information on their respective storage methods. The list of designated warehouses for storing the foodgrains earmarked for the SFB was updated by the member countries. There are 43 warehouses in total, as presented in Table 1. India, being the largest contributor, has earmarked its reserve in 23 warehouses which are spread across the country. The spatial distribution of the godown locations is shown in Annex Figure 2.

Table 1: Location-wise Designated Warehouses for SAARC Food Bank

Country	Designated Warehouses	Locations of Warehouses
Afghanistan	1	Kabul
Bangladesh	3	Chittagong, Dinajpur and Khulna
Bhutan	3	Phuentsholing, Gelephu and Samdrup Jongkhar
India	23	Punjab (6), Haryana (3), Rajasthan (2), Uttar Pradesh (1), West Bengal (8) and Tamil Nadu (3)
Maldives	1	Maafannu
Nepal	5	Jhapa, Morang, Parsa, Kathmandu and Kailali
Pakistan	6	Pakpattan, Okara (2), Burewala, Gaggo (Multan) and Musa Virk
Sri Lanka	1	Veyangoda

Source: Authors' compilation based on information collected from KIIs and minutes of the 8th SFB Board Meeting.

[24]The amendments of the 9th SFB Board Meeting are not included in this section (Section 4.3), since these are yet to be approved at the Meeting of the Council of Ministers. The 38th Meeting of the Council of Ministers was to be held in Islamabad on 8 November 2016, which got cancelled on 30 September 2016. The approval and formal amendment are to come into force only when there is a meeting of the Council of Ministers of the SAARC member countries. The developments of the 9th SFB Board Meeting have been selectively referred to in the subsequent discussions.

4.3.3 Discussion on Reform Agenda

Extensive discussions were held at various SFB Board meetings on the following issues:

- At the 4th Board Meeting of the SFB in Dhaka, modalities of *deferred payment* were discussed. However, members were not able to reach an agreement about the pricing modalities.
- In the original SFB Agreement the definition of food emergency was stated under Article V (2) in the following way – "*A food emergency shall mean a state or condition in which a Member Country, having suffered a severe and unexpected natural or man-made calamity, is unable to cope with such a state of condition by using its national reserve.*" At the 9th SFB Board Meeting, members agreed to replace the text relating to 'food emergency' by 'emergency' in Article V of the Agreement.
- The issue of reassessing the minimum threshold criteria has been an agenda for discussion since the second SFB meeting.[25] At the 18th SAARC Summit, the leaders gave directions to eliminate the threshold criteria from the SFB Agreement with a view to enabling the member countries to avail foodgrains during both emergency times and normal times when they face difficulty. At the most recently held 9th Meeting, the SFB Board has decided to amend the Article V (3), with a view to deleting the trigger criteria relating to withdrawal of foodgrains from the SFB.[26] However, this amendment is yet to be approved at the meeting of the Council of Ministers. At this Ministerial meeting, the results (Box 1) may be presented as evidence to justify the Board decision to do away with the trigger threshold.

Box 1: Results of the Meta-analysis

Results of meta-analysis (Annex Table 15) based on production data for foodgrains at country level (FAOSTAT) suggest that, if production shortfall of foodgrains in 2015 was 8 per cent lower than the average of the production of the previous three years (2012, 2013 and 2014), the entire SFB reserve would be adequate to support Afghanistan, Bhutan and Sri Lanka only. Estimates also indicate that, the SFB has reserve adequacy to support only 2 per cent of India's admissible production shortage (of 8 per cent mentioned above), while it is equivalent to only 12 per cent and 20 per cent of shortfalls in cases of Bangladesh and Pakistan, respectively (Annex Table 15).

Similar exercises have been carried out with varying extent of possible production shortfall (5 per cent, 3 per cent and 1 per cent). Results are presented in Annex Table 15. Same pattern of results emerges for major agricultural countries (India, Pakistan and Bangladesh) of SAARC. At the level of 5 per cent admissible production shortfall, the SFB would have reserve adequacy to support only 4 per cent of India's production shortage, while it would be equivalent to only 18 per cent and 31 per cent, respectively, for Bangladesh and Pakistan. Similarly, if the shortfall criteria is set at 3 per cent, it is observed that the SFB would have reserve adequacy to support only 6 per cent of India's admissible production shortage, while for Bangladesh and Pakistan, these would be 31 per cent and 52 per cent, respectively. Furthermore, if the shortfall criteria is set at 1 per cent, the SFB would have reserve adequacy to support only 19 per cent of India's admissible production shortfall, while it will be able to cater for 92 per cent of Bangladesh's admissible production shortfall (Annex Table 15). Thus, one finds that the reserve was not adequate enough to address the shortfall in production, which could originate from the criteria of 3-years average production.

Another dimension of the abovementioned conditionality was tested by comparing the production of 2015 with the average of previous three years (2012 to 2014), five years (2010 to 2014) and seven years (2008 to 2014), juxtaposed against the criteria of production shortfall of variable percentages (8 per cent, 5 per cent, 3 per cent and 1 per cent). The results are presented in Annex Tables 15, 16 and 17, respectively. Here also, similar patterns of inadequacy of reserve can be observed.

[25] As was stated above, for a member country to be eligible to seek help, production of foodgrains of that country in the current year has to be 8 per cent lower than the average of the production of the previous three years.

[26] To the best of our knowledge, no supporting evidence to justify such a decision was placed before the Board prior to its 9th Meeting where findings based on an earlier version of the present study were presented. Results of the analyses (Box 1) carried out for the current study were presented on 21 September 2016 at a Conference held to coincide with the 9th SFB Board Meeting which took place in Kathmandu, Nepal.

4.3.4 Laboratory Facility

The idea of regional Food Analysis Laboratory(s) was proposed by India at the 4th SFB Meeting (2010). SFB Board designated Central Grain Analysis Laboratory (CGAL), New Delhi, India as SAARC Foodgrain Testing Reference Laboratory. Training facilities and storage systems of foodgrains available at the Indian Grain Storage Management and Research Institute (IGMRI), Hapur and godowns of Food Corporation of India (FCI) were visited by a delegation to learn about the issues involved (DFPD, 2016).

4.3.5 Skill Training Programme

The need for training of officials to raise capacity to oversee the food reserves cannot be overestimated. The first training course was held at the FCI Food Security Institute, Guragaon, India in February 2009 (3rd Meeting Minutes of SFB Board). IGMRI organised a training programme on 'Food Grain Testing, Quality Control and Scientific Storage' for officials of SAARC member states following the 7th SFB Board Meeting. The SFB Board also planned to organise similar skill training programmes to improve skills of officials involved in the process of testing and quality assurance. Participants from Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka took part in this inaugural training programme (DFPD, 2016).

4.4 Challenges in Operationalising the SFB

The SFB could not be operationalised despite some of the subsequent amendments to facilitate the process. One of the key reasons, as it emerged from consultations with the various stakeholders, was that no country had experienced such level of emergency that qualified it to seek support from the SFB.

In order to explore the above issue further, a meta-analysis was undertaken as part of this study. The exercise was based on country-level production data retrieved from the FAOSTAT (Statistical Database of FAO). The analysis reveals that there were four cases where production of foodgrains dropped by 8 per cent compared to the average of previous 3-years' production. In 2008 and 2011, Afghanistan experienced 29.1 and 13.9 per cent production shortfall in foodgrains, respectively, compared to the average production level for the preceding three years. Similarly, Pakistan experienced 9.6 per cent production shortfall due to the prolonged flood experienced in 2012 (Annex Table 18). Most recently, in 2014, Sri Lanka had experienced nearly 18 per cent production shortfall due to the drought in most parts of the country before the main harvesting season (Annex Table 18). Thus, the notion that SFB could not be operationalised because of the high threshold of eligibility is not corroborated by the evidence on the ground. Indeed, anecdotal information suggests that, in few cases, certain SAARC members did request support from the SFB on grounds of eligibility. However, in the end, SFB mechanism could not be put into practice to address the requests. The present study has made an attempt to examine the involved issues through a critical scrutiny of the various articles in the Agreement.

4.4.1 Inadequate Quantum of Reserve

According to the abovementioned analysis (Annex Table 15), even at 1 per cent admissible production shortfall compared to the previous 3-years average, India and Bangladesh cannot be adequately supported even if the entire SFB reserve of 486 thousand MT was put at the disposal of these countries. Indeed, the entire SFB reserve is adequate to support only 19 per cent and 92 per cent of admissible production shortfall, respectively, in cases of India and Bangladesh. In view of the above analysis, the SFB reserves will need to be significantly raised.

4.4.2 Storage and Stock Management

The storage systems for rice and wheat are different and involve different technical requirements. The system of maintaining the storage of foodgrains and ensuring that required quality standards are maintained, involves significant amount of funds along with administrative- and infrastructure-related resource allocation which further contributes to cost escalation. Budgetary allocations (as a share of respective national budgets) for ensuring food security, as will be understood, vary across South Asia; not all countries are well-endowed to underwrite the expenditures involved. Thus, in the absence of earmarked fund for the SFB, issues concerning its operationalisation have remained unaddressed. There is, thus, a need for coordination among the member countries to generate the needed resources to address the aforesaid tasks.

4.4.3 No Dedicated Funding for SFB

There is no dedicated funds for undertaking the operational costs of the SFB. As mentioned earlier, the costs incurred in the operations of the SFB are to be financed by the SAARC Secretariat. However, a separate and dedicated fund would have been effective to help SFB to support relatively less-endowed member countries in maintaining the quality and quantity of foodgrains earmarked for the SFB (with reference to Section 3.4). Member countries may be encouraged to assign some dedicated funds for the SFB in their respective national budgets.

4.4.4 Pricing Mechanism

A pricing mechanism has gradually evolved concerning the operationlisation of the SFB, as shown in Annex Box 2. However, the coefficients α, β, λ and η have not been specified in any of the subsequent meetings held in connection with SFB. The reference export price has not been specified either. If the reference price relative to which the discounted price is set, itself is high, reflecting the forces of supply-demand of the market, then it is difficult to meet the humanitarian objectives. The price to be paid by the receiving (affected) country also includes transportation and administrative costs in addition to costs incurred on account of other logistical supports. Determination of all these costs require access to the needed information, and time is rather scarce in times of emergency. Arriving at an acceptable, reasonable, humane and concessional price level continues to remain a significant challenge in determining the price at which food is to be accessed.

4.4.5 Lack of Information Sharing

The SFB Board has been urging member countries to share their respective data on production, requirement and export/import of foodgrains, with applicable prices, according to the format agreed upon at the 3rd SFB Board Meeting. These data were to be shared with SAC with a copy to the SAARC Secretariat (as committed by the Board members at the 7th SFB Board Meeting). One observes a lack of readiness on the part of member countries to share information as regards quantum of respective reserves of rice and wheat. As both rice and wheat are considered to be politically sensitive items, countries tend to be reluctant to report about actual amounts of national reserve. SAARC Food Bank Information System (SFBIS) has been launched at the 9th SFB Board Meeting to address this particular issue. Hopefully, this laudable step will facilitate inter-governmental sharing of information in this connection. Indeed, if public access to this information system is allowed, this would enable experts to share their views and provide useful inputs. This collaborative government-expert effort could be helpful in generating early warnings as regards any possible food emergency situation. It may be noted in this context, that apart from the 'Agreement of Establishment', other relevant documents are not available in the public domain. There is no 'implementation/regulatory plan' document that would

articulate how the SFB was to function. Moreover, formulation and circulation of a set of guidelines on storage methods, practices and quality control measures are also long-pending matters.[27]

5. LEARNING AND LESSONS FROM CROSS-REGIONAL EXPERIENCE

A number of regional groupings have set institutional arrangements to address food security concerns through cross-country collaborative initiatives. These experiences can provide useful information for the purposes of operationalising the SFB.

5.1 ASEAN Plus Three

Regional food reserve in ASEAN[28] has been in place since 1979 in the form of ASEAN Food Security Reserve (AFSR) and ASEAN Emergency Rice Reserve (AERR). AFSR's objectives are to address regional food emergencies and offset any urgent food crisis with the earmarked 50 thousand MT of rice reserves (which was raised to 87 thousand MT under the pilot project titled East Asia Emergency Rice Reserve (EAERR)). However, neither AFSR nor AERR/EAERR was brought into play to address an emergency situation prior to 2006, when EAERR provided 100 tonnes of rice to flood victims in Indonesia. This was followed by allocation of 520 tonnes of rice from Thailand to victims of Typhoon Ondoy in the Philippines in 2009.[29]

In 2011, EAERR was converted to ASEAN Plus Three Emergency Rice Reserve (APTERR) with inclusion of China, Japan and South Korea as part of an agreement, which came into force in 2012. The APTERR is to be governed by a Council, with day-to-day management to be carried out by a Secretariat. The APTERR was formally launched in March 2013, with the first meeting of the APTERR Council, participated by 13 member countries. Joining of China, Japan and South Korea with the 10 original members gave a new lease of life to this regional food security initiative. The three new entrants provided an additional 700 thousand MT of rice[30], replenishing the 87 thousand MT contributed by the core 10 ASEAN partners. The provision of bilateral arrangements has evolved into management of food reserves on a regional scale. To facilitate the operationalisation of the reserve fund, APTERR members have agreed to create a fund worth USD 4 million (China, Japan and South Korea were to contribute 75 per cent of the fund).

As it transpires, the new composition of APTERR has released the pressure from rice-exporting countries such as Thailand and Vietnam, thanks to inclusion of China, Japan and South Korea. The distinctive features of APTERR in comparison to the AFSR are: (i) size of the reserve has been significantly increased to 700 thousand MT; (ii) unlike AFSR, reserve is owned by APTERR and funds have been made available for operationalisation and maintenance of the reserve; (iii) rice is stored in three donor countries as also with the rice-importing countries of the region, to offset the consequences of likely export ban that was experienced by AFSR during the 2007-08 food price crisis; (iv) unlike the AFSR, APTEER is not only an emergency food reserve, but also aims to smoothen price volatility in the market; (v) there are provisions of dispute settlement in the arrangement; (vi) definition of emergency is clearly articulated (an emergency situation is certified by a call letter from the recipient country); acceptance is subjected to the approval of the APTERR Secretariat and the APTERR Council; (vii) the modality for price trigger

[27]As per the 9th SFB Board Meeting Minutes, the necessary information (according to a format circulated in the 6th/7th Meeting) has been submitted only by Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka, whereas Afghanistan and Pakistan committed to provide the information as soon as possible.

[28]In 1979, five ASEAN countries Indonesia, Malaysia, the Philippines, Singapore and Thailand were members of the Agreement.

[29]www.apterr.org/index.php/current-issues/37-year-2006/74-april-2006-flood-victims-in-east-javareceived-support-from-eaerr (November, 2011).

[30]China, Japan and South Korea have pledged to provide 300 thousand tonnes, 250 thousand tonnes and 150 thousand tonnes of rice, respectively, to the APTERR. Available from: http://www.asean.org/wp-con-tent/uploads/images/2012/Economic/AMAF/Agreements/ASEAN%20Plus%20Three%20Emergency%20Rice%20Reserve%20Agreement%2022.pdf

is still being discussed and developed. It has been decided in principle that the transaction should be based on international market price on a cash basis; (viii) forward contract is valid for three years (Lines, 2011; Briones, 2011; Jongskul, 2012).

Since its operationlisation in 2013, APTERR has distributed rice under Tier 3 programme, for humanitarian purposes, to Lao People's Democratic Republic, Indonesia, Cambodia and the Philippines (which includes rice donation to the people affected by Super Typhoon Haiyan in 2013). APTERR Council and Secretariat have made commendable progress as regards reserve and release systems, financial and administrative support mechanism, and harmonisation of cross-country rules and regulations.

5.2 RESOGEST

To provide guaranteed access to food in the event of scarcity, Sahel countries of West Africa, along with the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), have established a food reserve system which is popularly known as RESOGEST. The primary objective of the RESOGEST is to facilitate cereal trade among and between countries with net surplus and net deficit through triangular operations (purchase/sales/loans), and stimulation of sub-regional trade in agricultural produce and food products (Lines, 2011). Member countries pledge 5 per cent of their national food stock to the regional food reserve (RESOGEST, 2012). The network has developed an understanding as regards elimination of trade barriers for cereal trading and sharing of information among member countries. They have also taken initiatives to improve capacity on technical and financial management and use of all available resources to mobilise food stock during emergencies, and taking advantage of each other's information system including early warning and surveillance systems. In cases of emergency, the network was to ease the process of inter-country cereal transfer beyond the regulations of regular trade; this was geared to reducing operational cost.

The network was also supposed to establish an extensive information system which was to be linked to the various existing systems such as the Regional Food Crisis Prevention Network (PREGEC in French), market information systems (SIM in French), livestock market information systems (SIMB in French), early warning systems (SAP in French), the Food and Nutrition Security project (SAN in French), the Agricultural Information System (AGRIS), the West African Market Information System Network (RESIMAO in French) (Rahman and Khaled, 2012).

However, the reserve was never used by the member countries mainly because of the following shortcomings and constraints: (i) lack of clear definition of emergency situation; (ii) absence of a well-articulated trigger price and modalities for cereal trading; (iii) diverse nature of staple food in the region which varied across member countries; (iv) absence of quality control mechanisms for cereal trading (in cases of loan and grants); (v) inadequate size of the committed reserve at national level to address regional emergency food crisis; (vi) no early warning system (Lines, 2011; The Rural Hub and ECOWAS, 2012).

5.3 CARICOM

The Caribbean Community (CARICOM) was established in 1973 as a framework to promote economic and other forms of cooperation among the 11 member states. Unlike APTERR or RESOGEST, the regional initiative of CARICOM is not only limited to ensuring food and nutrition security, but also covers broader economic issues that involve coordinating economic policies and development planning, devising and implementing special projects for the less developed countries within its jurisdiction, operating as a regional single market for many of its members (CARICOM Single Market), and handling regional trade disputes (Byron, 2014). CARICOM has a unique Regional Food and Nutrition Security Policy

(RFNSP). CARICOM countries have low domestic food production capacity and are highly dependent on food import. Countries' vulnerability was particularly exposed during the financial crisis of 2007-08. They are susceptible to food pride volatility and climate-induced shocks.[31] In order to reduce food- and nutrition-related vulnerabilities, the community has developed a 15-year (2012-2026) regional food and nutrition security action plan to help implement the objectives of the RFNSP. Two main objectives of the RFNSP are to: (i) create regional and national 'value chains' by establishing links between small- and medium-sized farmers and food industries in the region; (ii) reduce imports of key commodities from the United States such as feed corn (Wilson, 2016). In this backdrop, the food- and nutrition-related programmes of CARICOM are closely interlinked with greater regional agricultural management initiatives that go beyond the limited focus of addressing and mitigating food security-related efforts. CARICOM experience is relevant for operation of SAC which is geared to improving the overall food security situation in South Asia. CARICOM also puts emphasis on developing a strong regional Information System for Food and Nutrition Security (ISFNS), and regional information system on water-sharing in order to improve water resource management for better agricultural production.

The experience of regional food security initiatives mentioned above is pertinent for operationalising the SFB both in terms of what to do and what not to do. For example, size of the reserves need to be adequate for the food banks to be effective, and exchange of reliable relevant information is critically important. On the other hand, in absence of a well-crafted definition of emergency, trigger price and early warning system, it is difficult to operationalise SFB-type of initiatives.

6. RECOMMENDATIONS FOR OPERATIONALISATION OF THE SFB

Based on the experience of the progress made with respect to the SFB, review of cross-country best practices (as presented in Section 5), review of literature and consultations with relevant stakeholders and experts, a number of recommendations have been proposed in the following section with a view to raising the efficacy of the SFB and towards its operationalisation.

6.1 Policy Amendments

i. It may be noted here that, two of the recommendations put forward in the earlier draft of this paper have been discussed at the 9th Board Meeting of the SFB. The SFB Board has agreed to amend the definition of 'food emergency' and 'food shortage' (Article V (2)). In addition, if the agreed amendment as regards Article V (3) (mentioned in Section 4.3.3) is approved by the SAARC General Assembly, then the current threshold criteria of 8 per cent admissible production shortfall will be done away with. These decisions would enable member countries to receive support from the SFB reserve in cases when food crisis or emergency originate from price volatility. These decisions will hopefully contribute to making the SFB an effective institution and serve its purpose.
ii. The provision for dispute settlement should be included in the SFB Agreement with a view to settling possible disputes between two or more SFB members through negotiations or through a set of rules agreed upon by all members.

6.2 Enhancing Regional Trade

iii. Although overall intra-regional trade is not significant in the SAARC region, it is observed (in Annex Tables 11 and 12) that the amount of intra-regional trade in foodgrains in the region is not negligible. Freer movement of foodgrains and removal of non-tariff bottlenecks will contribute

[31]The food price volatility arising from the food and financial crises of 2008-09 and 2011-12 has forced the region to confront the serious financial, food security and health-related consequences of such high dependence on food imports.

towards better availability of foodgrains across various SAARC countries. This will also have positive impact on reducing price volatility across countries. Freer movement of foodgrains across borders will contribute towards mitigating food security concerns, and will thus reduce the need for dealing with food-related emergencies which SFB-type institutions are geared to address.

iv. SAARC countries should come to an agreement that trade-related restrictions of the type seen during 2007-08 economic and food crises, in the form of minimum export price or outright ban, will not be enforced in case of intra-regional trade in foodgrains during times of crisis. For a start, such a commitment may be made with respect to export of foodgrains to the four least developed country (LDC) members of the SAARC.

6.3 Pricing Strategy

v. Thanks to the regional trade in foodgrains, there does exist a *reference price* for comparison purposes and for determining price of foodgrains (Annex Box 2). Besides, up-to-date and reliable international market prices of rice and wheat are readily available from various global sources. During incidents of natural disasters or emergency food crisis, such prices could be taken to serve as the *reference price* for the purposes of the payment of foodgrains received by any country under the SFB mechanism. It is to be noted that 'deferred payment' has been proposed as a pricing modality at the 4th SFB Board Meeting. In this regard, SFB Board may like to request SAC or any competent and independent research organisation to estimate the coefficients mentioned in the proposed equations.

6.4 Need for Additional Provisions

vi. Designated testing laboratory for the purpose of SFB is now in place. To eliminate procedural constraint regarding quality standards, SFB Board should develop a system of issuing 'No Objection Certificate' in collaboration with the CGAL. This will ensure that the required quality of foodgrains is maintained. Member countries may be required to notify the Board each time the stocks are replenished; stocks should then go through *sample testing procedures*. These may be included as a provision under Article IV of the SFB Agreement.

vii. Assuming member countries have 'No Objection Certificate' about the quality of the foodgrains kept in the reserve, the following hypothetical network could be deployed during food emergencies to reduce transportation time and improve operational efficiency. During emergencies, time needed to ensure access to foodgrains could mean the difference between life and death – the hypothetical example mentioned in Box 2 may prove to be time-efficient and cost-effective.[32] In line with this, SFB Board can add a provision which would allow the SFB authority to step in and regulate its operation with greater effectiveness. Specific modalities may be developed for landlocked or island countries[33] in SAARC by expanding the network beyond triangular cooperation.

viii. As a forward-looking strategy, SFB could include a provision to keep a certain share of the reserves in the form of bio-fortified rice. This nutritionally rich rice may be targeted to the most vulnerable groups during periods of emergency. In this regard, World Food Programme's (WFP) existing mechanism of distributing specialised fortified nutritious foods could be taken into account.[34]

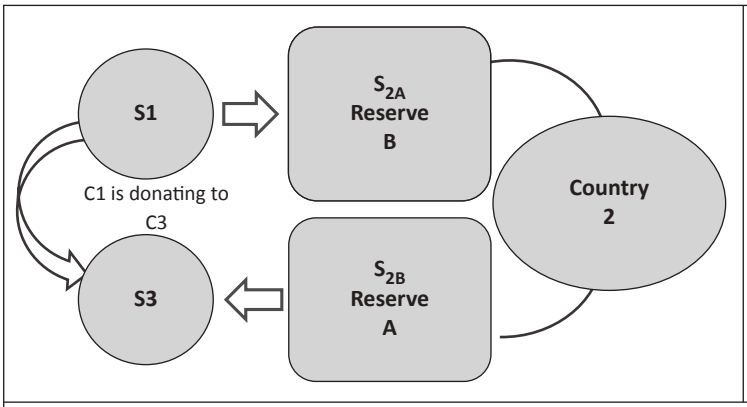
ix. Unlike APTERR, which is a regional reserve for rice only, SFB allows reserves in the form of both rice and wheat. As is seen from the experience of RESOGEST, diverse nature of staple food creates problems in operating regional food reserves. SFB Board may like to design strategies to offset

[32]As can be discerned, even if the donor country is situated at a distance, prompt action of the neighbouring country with adequate provision and delivery of foodgrains will be relatively more effective, and ideally this should be the general practice.

[33]The size and spatial features of South Asian countries are highly diverse: Afghanistan, Nepal and Bhutan are landlocked countries, whereas Maldives and Sri Lanka are island countries. Bangladesh is surrounded on three sides by India.

[34]WFP already has this mechanism in place for South Asian countries such as Bangladesh, India, Nepal, Sri Lanka, etc.

Box 2: Operationalising the SFB: A Cross-country Hypothetical Network



Note:
S1 = Reserve Storage for Country 1
S_{2A} = Reserve Storage of Country 2 nearest to the borders of Country 3
S_{2B} = Reserve Storage of Country 2 nearest to the borders of Country 1
S3 = Reserve Storage for Country 3

Let us assume, Country 3 (C3) has an emergency and Country 1 (C1) has agreed to provide foodgrains to C3. The requested amount of foodgrains by C3 can be adequately supplied from the reserves that C1 holds at that particular time. However, the affected regions of C3 are closer to the border of Country 2 (C2) which has reserve storage S2B at proximate locations. In this case, SFB authority may step in to regulate the release of foodgrains from S2B on the basis of the request of C1 and get it speedily transported to affected regions of C3. The request made by C1 will be treated as equivalent to commitment by C1 to replenish the reserve of C2, within a stipulated period of time (say, within two weeks), preferably at the storage facility closest to the borders of C1 (S2B). In the process, the internal and external carrying costs would be borne by the two primary negotiating parties (in this case, C1 and C3). All three countries will notify the SFB committee separately about their respective actions.

Source: Prepared by the authors.

possible implications of the diversity in regional staple food intake. SFB Board could evaluate, during emergency, whether the effective utilisation value of rice and wheat stock can be treated as equivalent in terms of readiness for consumption.[35]

6.5 New Institutional Mechanisms

x. To ensure smooth functioning of the Food Bank, the option of establishing a dedicated fund for the SFB should be considered with utmost urgency. SFB Board may take inspiration from the practices pursued by the APTERR, which is to maintain an endowment fund as also an operational fund. Countries such as Maldives which hardly produces any foodgrains may make their contribution to the SFB in monetary terms. As mentioned in the preceding section, current SFB reserve is not adequate in supporting food emergencies in countries such as India.[36] A production shortfall in India would have significant impact on international trade and would escalate prices of foodgrains. In view of this, an operational fund can step in and provide the needed support.

xi. An agricultural forecasting committee with capacity to undertake forecasting work on foodgrains production and possible food shortages should be constituted. Indeed, a committee, SAARC Monsoon Initiative, was in place under the wing of SAARC Meteorological Research Centre (SMRC). The main objective of the body was to project possible shocks and natural calamities and alert the countries under threat via targeted policy briefs. At present, SMRC and three other centres have been merged into SAARC Environment and Disaster Management Centre (SEDMC). It remains unclear which entity will be responsible to undertake agricultural forecasting. It is to be noted that, discussions are in progress as regards inclusion of projections on price volatility as a

[35]For example, in 2015 in the aftermath of the earthquake, the Nepalese Government requested Bangladesh for food assistance in the form of only rice from the SFB reserve. Due to the poor electricity situation, the reserve of wheat grains had no use for immediate crisis management in Nepal. Similar points have been made by officials of Food Department in Bangladesh, concerning food relief management during times of flood or natural disaster.

[36]Indeed, 8 per cent production shortfall of foodgrains for India is estimated to be nearly 2.5 times higher than the combined shortfall for all other countries. In the global context, India's 8 per cent shortfall in foodgrains production is estimated to be 1.4 per cent equivalent of global production of foodgrains.

mandate of the forecasting committee. In South Asia, network of weather stations belonging to the meteorological departments of different countries is rather weak. This problem is compounded by lack of high quality weather data for locations smaller than the district level. The information system and data generation and sharing will need to be significantly strengthened if the forecasting body is to function efficiently and effectively. Use of Geographic Information System (GIS) and other latest technologies could contribute to this.

xii. SFB may develop medium- to long-term agreements with private traders to maintain additional commodity inventory over which SFB will have the right of first refusal as regards purchasing rights. As per the proposed agreement, private traders will be asked to integrate increased storage capacity into their normal pipeline for trading activities in foodgrains. This extra storage facility will be used to hold a certain amount of foodgrains in agreement with the SFB. The foodgrains would be owned by the trader, but guaranteed to be available for SFB's purchase at any time at SFB's request. No doubt, grain traders will incur additional costs related to the storage of this additional grain; this may be partially or fully compensated by the SFB. Access to this additional foodgrains stock could be made use of by the SFB in times of crisis, to smoothen foodgrains consumption and mitigate price volatility. Such arrangements could also be made use of during periods when SFB will need to respond to an emergency. However, there is no denying that such public-private partnership (PPP) will be a major departure from the current practice of inter-governmental exchanges. For a start, memorandum of understanding (MoU)-type of arrangements may be considered with a view to providing an additional window of access and availability in times of emergencies.

6.6 Options for Institutional Tie-up

xiii. As was noted earlier, ASEAN's capacity as well as flexibility was significantly enhanced with the entry of China, Japan and South Korea in the food reserves system. This indicates that greater access to foodgrains could make operationalisation of food security mechanisms such as the SFB more effective. It is conceivable that the SFB, at some point in time in future, could think of coming to an understanding with ASEAN food reserves from which both the food security systems could stand to benefit. In this regard, it is important to highlight that at the 9th SFB Board Meeting members have agreed to add a provision which allows the Board to explore the implementation of regional food security projects in collaboration with the international development partner organisations under MoUs with the SAARC Secretariat. Indeed, a recommendation to this effect was made in the earlier draft of the present paper which was presented at the 9th SFB Board Meeting in Kathmandu, Nepal.

xiv. SFB may consider collaborating with the WFP. This could benefit the SFB in three major ways: i) SFB may use the Vulnerability Analysis and Mapping (VAM) assessment developed by the WFP as an eligibility criterion for countries to seek help; ii) SFB may make use of the logistics architecture of the WFP to ensure better distribution of foodgrains during times of emergency; iii) SFB may utilise WFP's early warning and early impact analysis mechanisms to forecast weather.[37]

6.7 Distribution Mechanism

xv. As seen from earlier discussion, all SAARC member countries have well-functioning PFDS. The nodal agencies designated with the responsibility to interact with the SFB Board are mainly the national agencies in place which are involved with the task of distribution and maintenance of the foodgrains reserves for the SFB. The PFDSs at national level are well-equipped to reach vulnerable populace and remote habitats. Food deficit, vulnerable and remote areas can be mapped relatively

[37] http://www1.wfp.org/emergency-preparedness-and-response

easily by national agents; similarly, at times of emergencies, impoverished households and individuals in the affected regions can be identified more competently by respective government institutions than a regional body. There is a need for closer interface between SFB and PFDSs in the architecture of operationalisation of the SFB, so that in times of emergency, the foodgrains from the nearest storage facilities can be made available to the national PFDS of (affected) countries for distribution to the needy households and individuals in affected areas.

6.8 SFB as an Opportunity to Meet SDG Goals and Targets

xvi. SDG 1 calls for eradication of extreme poverty for all people everywhere, and obligates countries to reduce, at least by half, the proportion of population living in poverty in all its dimensions and to implement nationally appropriate social protection systems. SDG 2 calls for ending hunger and achieving food security and improved nutrition by 2030 by ensuring that, particularly the poor and people in vulnerable situations have access to safe, nutritious and sufficient food all year round. It obligates that by 2030 all forms of malnutrition will be eliminated. If these aspirations are to be attained by the SAARC countries, in a manner that the ambition of *Leave No One Behind* is achieved, a more enlightened regional view and regional collaboration will be called for. SFB could be an important tool in this regard. Global support towards implementation of the SDGs in developing countries can also be earmarked to strengthen SFB on the ground of mobilising support for implementing the SDGs.

6.9 The Need for Political Commitment

xvii. There is need for demonstrated and strong political support towards raising the efficacy of the SFB as an important tool to ensure region-wide food security and to attain the ambitions articulated in Agenda 2030 in the context of South Asia. Political commitment will give clear direction to concerned officials in the member countries to share the needed information, and will encourage the involved parties in member countries to undertake the needed initiatives to make the SFB effective, and to raise its operational efficacy. Adequate resources will need to be deployed to ensure that an appropriate SFB architecture is in place, the decision-making procedures are transparent, the food reserves, in quantitative and qualitative terms, are in place, and the networks have the capacity to work efficiently during times of emergencies. Only through a strong political commitment can all these be attained in a time-bound manner.

REFERENCES

Ahmed, T. (2013) *Scoping Report: Current Status of Index-based Insurance in Bangladesh.* Project Report: 2013-38. Penang: WorldFish. Available from: http://www.icccad.net/wp-content/uploads/2015/12/Scoping-Report-Current-Status-of-IBI-in-Bangladesh.pdf

Ahmed, M. and Suphachalasai, S. (2014) *Assessing the Costs of Climate Change and Adaptation in South Asia*. Manila: Asian Development Bank (ADB). Available from: http://www.preventionweb.net/files/38999_assessingcostsclimatechangeandadapt.pdf

Belesky, P. (2014) Regional governance, food security and rice reserves in East Asia. *Global Food Security*. 3 (3-4). p.167-173.

von Braun, J. and Torero, M. (2009) *Implementing Physical and Virtual Food Reserves to Protect the Poor and Prevent Market Failure.* IFPRI Policy Brief 10. Washington, D. C.: International Food Policy Research Institute (IFPRI). Available from: http://ageconsearch.umn.edu/bitstream/49997/2/bp010.pdf

Briones, R. M. (2011) *Regional Cooperation for Food Security: The Case of Emergency Rice Reserves in the ASEAN Plus Three*. ADB Sustainable Development Working Paper No. 18. Manila: Asian Development Bank (ADB). Available from: http://www.adb.org/sites/default/files/publication/29275/adb-wp18-regional-cooperation-food-security.pdf

Byron, J. (2014) Developmental regionalism in crisis? Rethinking CARICOM, deepening relations with Latin America*. Caribbean Journal of International Relations and Diplomacy*. 2 (4). p.23-50.

Curtis, M. (2014) "*Why Wait until the Next Crisis?*" *Improving Food Reserves Strategies in East Africa*. Nairobi: Agency for Cooperation and Research in Development (ACORD). Available from: http://www.acordinternational.org/silo/files/why-wait-until-the-next-food-crisis-.pdf

Dawe, D. (Ed.). (2010) *The Rice Crisis: Markets, Policies and Food Security*. London: Earthscan and Food and Agriculture Organization of the United Nations (FAO). Available from: http://www.fao.org/3/a-an794e.pdf

De Castro, P., Adinolfi, F., Capitanio, F., Di Falco, S., and Di Mambro, A. (Eds.). (2013) *The Politics of Land and Food Scarcity*. Abingdon: Routledge.

DFPD. (2016) http://dfpd.nic.in/saarc-food-bank.htm [Online]. New Delhi: Department of Food and Public Distribution (DFPD), Government of India. [Accessed: 27 February 2016].

Dummu, T. R. (2009) Commodity futures markets in India: Its impact on production and prices. *Indian Journal of Agricultural Economics*. 64 (3). p.333-356.

FAO. (2015) *FAO Statistical Pocketbook 2015: World Food and Agriculture.* Rome: Food and Agriculture Organization of the United Nations (FAO). Available from: http://www.fao.org/3/a-i4691e.pdf [Accessed: 5 March 2016].

FAO, IFAD and WFP. (2002) *Reducing Poverty and Hunger: The Critical Role of Financing for Food, Agriculture and Rural Development*. Paper prepared for the International Conference on Financing for Development. Rome: Food and Agriculture Organization of the United Nations (FAO), International

Fund for Agricultural Development (IFAD) and the World Food Programme (WFP). Available from: https://www.ifad.org/documents/10180/8ccc7684-0775-4745-a10a-3afe98ab12bd

FAOSTAT. (2016) *Food Security* [Online]. Available from: http://faostat3.fao.org/browse/area/*/E [Accessed: 4 April 2016].

GFSI. (2016) *Global Food Security Index* [Online]. Available from: http://foodsecurityindex.eiu.com/Index [Accessed: 16 April 2016].

Ghimire, R. (2014) Crops and livestock insurance practices in Nepal. *Journal of Business and Social Science. 1*(1). p.1-14.

Gilbert, C. L. (2011) *Food Reserves in Developing Countries: Trade Policy Options for Improved Food Security*. Geneva: International Centre for Trade and Sustainable Development (ICTSD).

von Grebmer, K., Bernstein, J., de Waal, A., Prasai, N., Yin, S. and Yohannes, Y. (2015) *2015 Global Hunger Index: Armed Conflict and the Challenge of Hunger.* Bonn, Washington, D. C. and Dublin: Welthungerhilfe, International Food Policy Research Institute (IFPRI), and Concern Worldwide.

Ingram, J., Ericksen, P. and Liverman, D. (Eds.). (2010) *Food Security and Global Environmental Change*. London: Earthscan. Available from: http://www.gecafs.org/publications/Publications/Food_Security_and_Global_Environmental_Change.pdf

Jongskul, A. (2012) "Current operations of ASEAN Plus Three Emergency Rice Reserve (APTERR)." In *Proceedings of the Presentation Delivered at the Asia Pacific Economic Cooperation (APEC) Food Emergency Response Mechanism Working Meeting*, 10-11 April, Taipei, Taiwan.

Lines, T. (2011) *The Potential Establishment of Emergency Food Reserve Funds*. Geneva: United Nations Conference on Trade and Development (UNCTAD). Available from: http://www.tomlines.org.uk/FoodReservesLinesDec11.pdf

LST. (2013) *Right to Food Security in Sri Lanka: Analysis of Legal and Policy Documents and Recommendations*. Report submitted to South Asia Watch on Trade, Economics and Environment (SAWTEE). Colombo: Law and Society Trust (LST).

Mittal, S. and Sethi, D. (2009) *Food Security in South Asia: Issues and Opportunities*. Working Paper No. 240. New Delhi: Indian Council for Research on International Economic Relations (ICRIER). Available from: http://icrier.org/pdf/WorkingPaper240.pdf

Murphy, S. (2009) *Strategic Grain Reserves in an Era of Volatility*. Minnesota: Institute for Agriculture and Trade Policy (IATP). Available from: https://www.iatp.org/files/451_2_106857.pdf

Pant, K. P. (2014) *The SAARC Food Bank for Food Security in South Asia*. Discussion Paper. Kathmandu: South Asia Watch on Trade, Economics and Environment (SAWTEE). Available from: http://www.sawtee.org/publications/DiscussionPaper18.pdf

Rahman, M. and Khaled, N. (2012) *LDC Issues for Operationalisation of the SAARC Food Bank: Bangladesh Case Study*. SAWTEE Working Paper. Kathmandu: South Asia Watch on Trade, Economics and Environment (SAWTEE). Available from: http://www.sawtee.org/Research_Reports/R2012-04.pdf

Raihan, S. (2011) SAARC Food Bank and Food Security in Bangladesh. In Adhikari, R., Adhikari, K., Sharma, P. and Kharel, P. (Eds.). "Food Security: Can Trade Address It?" *Trade Insight*. Special Issue, 7 (1). Kathmandu: South Asia Watch on Trade, Economics and Environment (SAWTEE).

Raju, S. S. and Chand, R. (2007) Progress and problems in agricultural insurance in India. *Economic and Political Weekly.* 42 (21). p.1905-1908.

RESOGEST. (2012) *Cooperation Framework*. Available from: http://portails.cilss.bf/archivesCILSS/IMG/pdf/RESOGEST_COOPERATION_FRAMEWORK.pdf [Accessed: 10 April 2016].

SAARC Secretariat. (2014) *Meeting Minutes of Eighteenth SAARC Summit*. Kathmandu: SAARC Secretariat. Available from: http://www.saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=44 [Accessed: 18 April 2016].

SAARC Secretariat. (2016a) *Agreement on South Asian Free Trade Area (SAFTA)* (updates only). Kathmandu: SAARC Secretariat. Available from: http://www.saarc-sec.org/userfiles/saftaagreement.pdf [Accessed: 11 June 2016].

SAARC Secretariat. (2016b) *Agriculture and Rural Development*. Kathmandu: SAARC Secretariat. Available from: http://www.saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=44 [Accessed: 10 May 2016].

The Rural Hub and ECOWAS. (2012) *Regional Food Security Reserve*. Abuja: Economic Community of West African States (ECOWAS). Available from: http://www.inter-reseaux.org/IMG/pdf/Faisabilite_Reserve_Regionale_EN.pdf

Toyoda, T. and Suwunnamek, O. (2011) Regional cooperation for food security in East Asia: From rice reserve APTERR and information system AFSIS to Common Agricultural Policy. Paper presented at the *7th Asian Society of Agricultural Economists (ASAE) International Conference*, organised by The Asian Society of Agricultural Economists (ASAE), 13-15 October, Hanoi, Vietnam. Available from: http://7thasae.ipsard.gov.vn/ppt/presentation/A4/A4_ASAE_Takeshi%20Toyoda.pdf

Trade Map. (2016). *Trade Statistics* [Online]. Geneva: Trade Statistics for International Business Development, International Trade Centre (ITC). Available from: http://www.trademap.org/Index.aspx [Accessed: 2 March 2016].

UNCTADstat. (2016) *Data Center* [Online]. Available from: http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=en [Accessed: 2 March 2016].

UNICEF. (2013) *Improving Child Nutrition: The Achievable Imperative for Global Progress*. New York: United Nations Children's Fund (UNICEF). Available from: http://www.unicef.org/gambia/Improving_Child_Nutrition_the_achievable_imperative_for_global_progress.pdf

Wickramasinghe, U. (2014) *Realizing Sustainable Food Security in the Post-2015 Development Era: South Asia's Progress, Challenges and Opportunities*. Development Paper 1402. New Delhi: South and South-West Asia Office (SSWA), United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP). Available from: http://www.unescap.org/sites/default/files/Realising%20sustainable%20food%20security%20in%20South%20Asia%20Upali%20Wickramasinghe%20_August%202014_FINAL.pdf

Wilson, M. (2016) Food and nutrition security policies in the Caribbean: Challenging the corporate food regime? *Geoforum*. 73. p.60-69. doi.org/10.1016/j.geoforum.2015.05.005

World Bank. (2004) *Trade Policies in South Asia: An Overview*. Report No. 29949 (Vol. 2). Washington, D. C.: The World Bank.

World Bank. (2016) *World Development Indicators (WDI)* [Online]. Washington, D. C.: World Bank Group. Available from: http://databank.worldbank.org/data/reports.aspx?source=poverty-and-equity-database [Accessed: 5 March 2016].

World Food Summit. (1996) *Rome Declaration on World Food Security.* Rome: Food and Agriculture Organization of the United Nations (FAO). Available from: http://www.fao.org/docrep/003/w3613e/w3613e00.HTM

ANNEXES

Annex Table 1: Comparative Scenario of Food Security Status in SAARC and Regional Countries

Indicator	World	Sub-Saharan Africa	Eastern Africa	East Asia	Southern Asia	Afghanistan	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka
Average dietary energy supply adequacy (%) (2015)	123	111	101	129	110	99	108	108	131	121	108	115
Share of dietary energy supply from cereals, roots and tubers (%) (2010)	52	64	63	52	60	77	80	59	41	70	50	58
Average protein supply (g/capita/day) (2010)	79	59	55	94	61	58	55	59	105	65	64	57
Average supply of protein of animal origin (g/capita/day) (2010)	31	13	10	37	14	12	10	12	71	11	26	15
Prevalence of undernourishment (%) (2015)	10.8	23.0	31.5	9.6	15.7	26.8	16.4	15.2	5.2	7.8	22.0	22.0
Depth of the food deficit (kcal/capita/day) (2015)	81	176	230	76	114	173	116	109	34	51	172	192
Prevalence of food inadequacy (%) (2015)	16.8	29.4	40.3	16.2	24.5	36.6	26.0	24.3	10.0	13.6	30.5	29.0
Cereal import dependency ratio (%) (2010)	-0.2	19.9	18.5	4.9	1.5	23.6	10.8	-3.1	100.0	3.9	-12.2	25.4
Per capita food production variability (Constant 2004-05) (2013)	2.8	3.5	2.9	1.9	2.8	6.0	4.0	4.1	1.5	8.1	5.4	3.7
Per capita food supply variability (kcal/capita/day) (2011)	10	5	11	24	23	20	17	28	69	26	14	17

Source: Authors' elaboration based on FAOSTAT (2016).

Note: kcal: Kilocalories.

Years in parentheses refer to corresponding data year.

All reported data for 2010 and 2015 are 3-years average.

Annex Table 2: Food Security Scores for SAARC Countries

Country	2012	2013	2014	2015	2016	Category*
Bangladesh	34.7	35.0	35.4	36.0	36.8	NI
India	48.7	48.2	47.9	48.9	49.4	M
Nepal	39.5	38.2	40.7	42.8	42.9	M
Pakistan	43.7	44.2	45.6	47.4	47.8	M
Sri Lanka	52.3	52.1	53.1	54.9	54.8	M

Source: GFSI (2016).

Note: *The scores are given out of 100; and category classifications are: Best (B): 72.4 to 86.6; Good (G): 57.1 to 72.3; Moderate (M): 41.6 to 57.0; Needs Improvement (NI): 24.0 to 41.5.

Annex Table 3: Ranking of SAARC Countries in Food Security Index (Out of 113)

Country	2012	2013	2014	2015	2016
Bangladesh	96	94	95	97	95
India	71	71	73	74	75
Nepal	82	85	83	83	82
Pakistan	78	77	77	78	78
Sri Lanka	64	65	63	62	65

Source: GFSI (2016).

Annex Table 4: Percentage of Wasting Children Under 5-Years of Age

Country	Pre-1995	2000-2005	Post-2010
Afghanistan	n.a.	8.6 (2004)	9.5[a]
Bangladesh	14.6 (1993)	13.0 (2003)	14.3 (2014)
India	21.1 (1992)	19.9 (2005)	15.1[b]
Maldives	16.1 (1994)	13.4 (2001)	10.6[c]
Nepal	7.5 (1995)	11.3 (2001)	11.2 (2011)
Pakistan	17.2 (1994)	14.2 (2001)	10.5 (2012)
Sri Lanka	17.5 (1993)	15.5 (2000)	21.4 (2012)

Source: Authors' compilation from FAOSTAT (2016), World Bank (2016) and WHO Global Health Observatory (GHO) data.

Note: a: National Nutrition Survey 2013, Afghanistan[38]; b: Rapid Survey on Children (RSOC): 2013-14[39]; c: The Maldives Health Statistics, 2013[40].

Annex Table 5: Percentage of Stunted Children Under 5-Years of Age

Country	Pre-1995	2000-2005	2015[a]
Afghanistan	n.a.	59.3 (2004)	41.0
Bangladesh	72.1 (1993)	49.8 (2003)	41.0
India	57.1 (1992)	44.6 (2005)	48.0
Maldives	36.1 (1994)	31.9 (2000)	20.0
Nepal	64.5 (1995)	57.1 (2001)	41.0
Pakistan	42.7 (1994)	41.5 (2001)	45.0 (2012)[b]
Sri Lanka	29.7 (1993)	18.4 (2000)	15.0

Source: Authors' compilation from FAOSTAT (2016), World Bank (2016) and WHO Global Health Observatory (GHO) data.

Note: a: UNICEF State of the World's Children (2015)[41]; b: Collected from World Bank (2016).

[38] http://reliefweb.int/report/afghanistan/national-nutrition-survey-afghanistan-2013

[39] http://wcd.nic.in/sites/default/files/State%20RSOC.pdf

[40] http://health.gov.mv/Uploads/Downloads//Informations/Informations(66).pdf

[41] https://www.unicef.org/publications/files/SOWC_2015_Summary_and_Tables.pdf

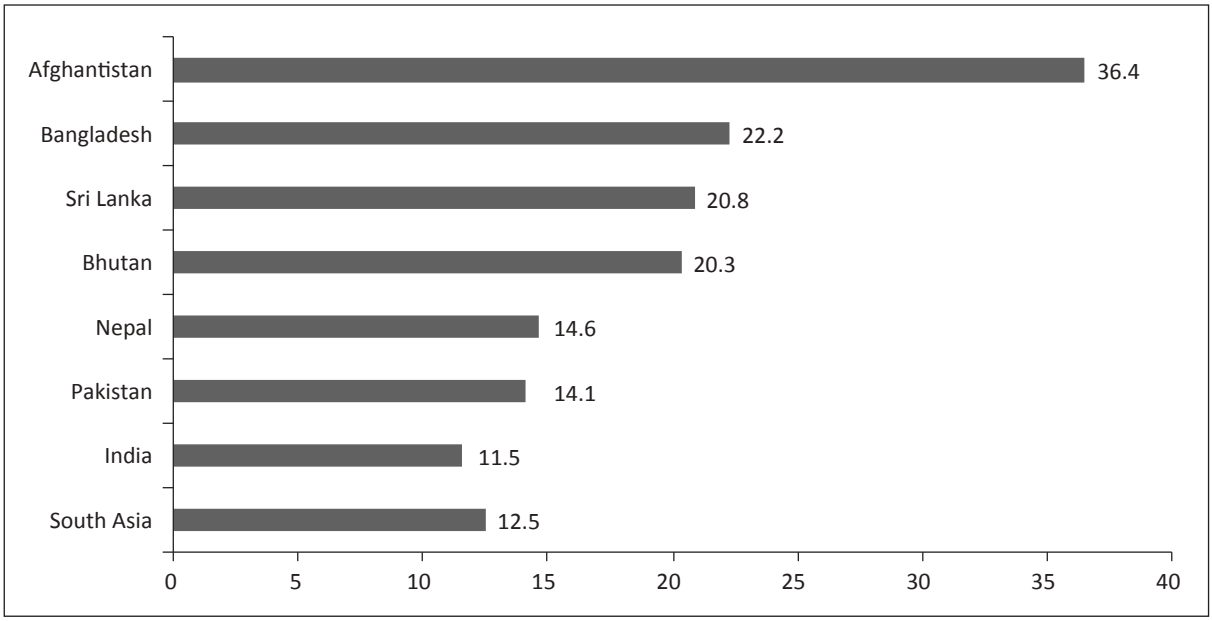
Annex Table 6: Percentage of Underweight Children Under 5-Years of Age

Country	Pre-1995	2000-2005	Post-2010
Afghanistan	n.a.	32.9 (2004)	25.0[a]
Bangladesh	59.0 (1993)	40.9 (2003)	32.9 (2014)
India	50.7 (1992)	40.3 (2005)	29.4[b]
Maldives	32.5 (1994)	25.7 (2001)	29.4[c]
Nepal	44.1 (1995)	43.0 (2001)	29.1 (2011)
Pakistan	35.3 (1994)	31.3 (2001)	31.6 (2012)
Sri Lanka	33.8 (1993)	22.8 (2000)	26.3 (2012)

Source: Authors' compilation from FAOSTAT (2016), World Bank (2016) and WHO Global Health Observatory (GHO) data.

Note: a: National Nutrition Survey 2013, Afghanistan[42]; b: Rapid Survey on Children (RSOC): 2013-14[43]; c: The Maldives Health Statistics, 2013[44].

Annex Figure 1: Coefficient of Variation of Production of SAARC Member Countries



Source: Authors' calculation using FAOSTAT (2016) data on production of rice and wheat for the period of 1995-2014.

Annex Table 7: Production Deficit/Surplus of South Asian Countries in 2013

Country	Population (Million)	Domestic Supply[1] ('000 MT)	Production ('000 MT)	Food Gap[2] ('000 MT)	Net Import ('000 MT)
Afghanistan	31	6,453	5,511	-942	1,292
Bangladesh	157	33,929	35,606	1,677	3,128
India	1,252	181,226	199,696	18,470	-18,473
Nepal	28	5,148	4,732	-416	532
Pakistan	182	27,313	28,746	1,433	-4,261
Sri Lanka	21	3,423	3,082	-341	831

Source: Authors' calculation using data from FAOSTAT (2016).

Note: 1. Domestic supply = Foodgrain production + Net import + Change in stock.

2. Food gap = Production – Domestic supply (negative sign demarcates 'Deficit').

[42]http://reliefweb.int/report/afghanistan/national-nutrition-survey-afghanistan-2013

[43]http://wcd.nic.in/sites/default/files/State%20RSOC.pdf

[44]http://health.gov.mv/Uploads/Downloads//Informations/Informations(66).pdf

Annex Table 8: Trade Openness of South Asian Countries

Country	2016			2014	
	Trade Openness	Import (% of GDP)	Export (% of GDP)	Time to Import (Days)	Time to Export (Days)
Afghanistan	55.9	49.0	6.9	91	86
Bangladesh	38.0	21.3	16.6	34	28
Bhutan	81.5	52.1	29.4	37	38
India	39.8	20.6	19.2	21	17
Maldives	182.8	89.0	93.8	22	21
Nepal	50.0	39.4	10.7	39	40
Pakistan	24.5	15.8	8.7	18	21
Sri Lanka	50.5	29.1	21.4	13	16
South Asia	38.9	20.9	18.0	34	33

Source: Authors' compilation from World Bank (2016).

Note: Data was unavailable for latest years for time to import and export.

Annex Table 9: Percentage of Intra-regional Trade to World Trade of the Region (5-Years Average)

Region	1996-2000	2001-2005	2006-2010	2011-2015
SAARC	4.6	6.1	6.1	6.2
ASEAN	22.9	24	25.0	25.4
ASEAN Plus Three	32.7	34.8	34.6	35.5

Source: Authors' compilation using UNCTADstat (2016).

Annex Table 10: Intra-regional Trade in Rice among SAARC Countries in 2014

(Tonnes)

Country	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Export								
India	6 (0.00)	873,884 (7.83)	8,509 (0.08)		20,001 (0.18)	539,823 (4.84)	1,146 (0.01)	521,322 (4.67)
Pakistan	201,786* (5.34)	5,781 (0.15)	X*	X	3,169 (0.08)	X		73,684 (1.95)
Sri Lanka	X	X	X	9 (0.245)	179 (4.87)	X	X	
Import								
Afghanistan		X	X	2,928 (2.45)	X	X	110,988 (92.93)	X
Maldives	X	6 (0.00)	X	19,775 (80.96)		X	3,273 (13.39)	271 (1.11)
Nepal	X	X	X	60,723 (99.92)	X	X	X	X
Pakistan	X	X	X	314 (0.96)	X	X		X
Sri Lanka	X	X	X	9 (0.245)	X	X	479,718 (79.95)	X

Source: Authors' compilation from Trade Map (2016).

Note: 1. Trade Map reports data separately for export and import. Availability of data depends on whether the data is reported or not at the country level. Thus, export of Country A to B will not necessarily be equivalent to the same as Country B's import from Country A.

2. Interpretation of data should be in the following pattern: "India's export to member countries and so on" or "Afghanistan's import from member countries and so on."

3. Numbers in parentheses refer to per cent equivalent of total export or import.

4. 'X' means no reporting of trade between partners.

*Nearly equivalent amount of trade of Rice, broken (HS [Harmonized Commodity Description and Coding System] code: 100640) and Rice, semi-milled or wholly milled, whether or not polished or glazed (HS code: 100630). For others, it is mostly trade of Rice, semi-milled or wholly milled, whether or not polished or glazed (HS code: 100630) between trading partners.

Annex Table 11: Intra-regional Trade in Wheat among SAARC Countries in 2014

(Tonnes)

Country	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Export								
India	30,050 (0.76) (100199)	1,338,106 (33.86) (100199)	83 (0.00) (100199)		2 (0.00) (100199)	106,235 (2.69) (100199)	X[3]	52,968 (1.34) (100199)
Pakistan	121,01 (97.11) (100111)	X	X	X	X	X		30 (0.24) (100111)
Import								
Nepal	X	X	X	137,206 (100.00) (100119) (100199)	X	X	X	X
Pakistan	X	X	X	X	X	X		30 (0.24) (100111)
Sri Lanka	X	X	X	114,597 (9.72) (100119)	X	X	6,171 (0.52) (100191)	

Source: Authors' compilation from Trade Map (2016).

Note: 1. Trade Map reports data separately for export and import. Availability of data depends on whether the data is reported or not at the country level. Thus, export of Country A to B will not necessarily be equivalent to the same as Country B's import from Country A.

2. Interpretation of data should be in the following pattern: "India's export to member countries and so on" or "Nepal's import from member countries and so on."

3. Numbers in parentheses refer to per cent equivalent of total export or import, followed by the commodity HS code that is mostly traded among the trading partners. HS code 100119: Durum wheat (excl. seed for sowing); 100190: Wheat nes and meslin; 100111: Durum wheat seed for sowing; 100199: Wheat and meslin (excl. seed for sowing, and durum wheat).

4. 'X' means no reporting of trade between partners.

Annex Table 12: Country-wise Bound and Customs Duty on Rice and Wheat

(in Per cent)

Country	Rice		Wheat	
	Bound Tariff	Customs Duty	Bound Tariff	Customs Duty
Afghanistan	40.0	2.5	40.0	5.0
Bangladesh	200.0	10.0	15.0	5.0
Bhutan	-	50.0	-	50.0
India	80.0	80.0	100.0	100.0
Maldives	30.0	0.0	30.0	0.0
Nepal[45]	60.0	10.0	50.0	10.0
Pakistan	100.0	11.0	150.0	11.0
Sri Lanka[46]	50.0	30.0 or specific duty Rs. 50 per kg	50.0	15.0

Source: Authors' compilation from the World Trade Organization (WTO) database and respective national custom divisions/departments.[47]

[45]Customs duty on rice and wheat imports from SAARC countries were 9 per cent and 6 per cent in FY2015-16, respectively.

[46]For a few varieties of wheat, general import duty was zero.

[47]Afghanistan (http://customs.mof.gov.af/Content/files/Afghanistan%20Customs%20Tariff%20%202014%20English.pdf); Bangladesh (http://customs.gov.bd/files/TRF1718V2_TTI.pdf); Bhutan (http://portal.drc.gov.bt/drc/sites/default/files/BTC%202017_0.pdf); India (http://www.cbec.gov.in/resources//htdocs-cbec/customs/cst1617-300616/chap-10.pdf); Maldives (https://www.customs.gov.mv/SearchTariff); Nepal (http://www.customs.gov.np/upload/documents/HS%202072_20150915105900.73(2015); Pakistan (http://download1.fbr.gov.pk/Docs/20161025151013191OTarrif-Chaper1To99-2016-17.pdf); and Sri Lanka (http://www.customs.gov.lk/tariffchanges/home).

Annex Box 1: Crop Insurance Initiatives in South Asia

Bangladesh: In the Budget for FY2013-14, a crop insurance policy was mentioned along with a pilot scheme to test out the possibilities. However, this was not followed up subsequently. Apart from this, several donor agencies, with the help of private insurance companies and non-government organisations (NGOs), have initiated programmes to develop crop-based insurance schemes. However, most of the initiatives to develop a weather index-based insurance scheme are only at the pilot phase (Ahmed, 2013).

Bhutan: In July 2016, the Ministry of Agriculture and Forests (MoAF) and the Royal Insurance Corporation of Bhutan Ltd. (RICBL) took up a project to formulate a crop insurance policy under the Prime Minister's directive.[48] The main objective of the insurance policy is to provide protection to the farmers against crop failures caused by natural calamities. The intention was to keep the policy as simple and affordable as possible. Once they have received approval from the government, the concerned authorities plan to take the message to the farmers, and then go for full-fledged implementation.

India: In 2016, the Government of India has approved a new crop insurance scheme, the Pradhan Mantri Fasal Bima Yojana (PMFBY)[49], to replace the previous scheme, with better terms for farmers. The trigger mechanisms stated in the scheme are as follows: i) A uniform premium of 2 per cent is to be paid by farmers for all *kharif* (winter) crops, and 1.5 per cent for all *rabi* (summer) crops. In case of commercial and horticultural crops, the premium to be paid by farmers will be 5 per cent. The premium rates to be paid by farmers are to be low, and the balance premium[50] has to be paid by the government, so that insured farmers get the needed amount against crop losses on account of natural calamities; ii) The provision of capping the premium rate resulted in low claims being paid to farmers (this was the case for the previous insurance scheme). In view of this earlier experience, the current scheme has removed the cap. It is also provisioned that farmers can claim against the full sum insured, without any reduction.

Nepal: The Government of Nepal, in 2013, introduced crop and livestock insurance directives (CLID) to encourage private insurance companies to develop commercial agricultural insurance.[51] The directive created obligation for all non-life insurance companies to offer agricultural insurance. By following the guidelines of directive, with the approval of Beema Samiti, insurance companies are allowed to develop and submit their own schemes. Livestock insurance under CLID covers cows, oxen, buffalos, yaks, sheep, goats, pigs, chicken, swan and ducks; and crop insurance covers bananas, coffee and tomatoes. However, there is no insurance coverage for the production damage of foodgrains (rice and wheat). It is also to be noted that, the Rastriya Beema Sansthan, the state-owned company, does not offer any form of crop insurance (Ghimire, 2014).

Pakistan: Pakistan has a crop loan insurance in place since 2008.[52] Sanctioning crop loan insurance is mandatory for a financial institution for any farmers requesting for any of the five major crops: wheat, rice, sugarcane, cotton and maize. Although the scheme is market-based, central government pays the premium for subsistence farmers. The operative point is that, it is not as much as the monetary compensations, but access to foodgrains during times of crisis, which remains a major concern for policymakers as well as the general public.

Sri Lanka: Since 1956, for over five decades, agricultural insurance scheme is in place in Sri Lanka. However, concern remained about its effectiveness. Since 1999, Agricultural and Agrarian Insurance Board (AAIB) is responsible to provide insurance for crop damages in events of drought, water stress, flood, excess water, plant diseases, pests and damage by wild animals. Though paddy is included under the crop insurance scheme[53], only an insignificant share of the total paddy area is covered under the insurance scheme.

[48]Information is mostly retrieved from: http://thebhutanese.bt/moaf-and-ricbl-target-crop-insurance-implementation-by-year-end/

[49]http://agritech.tnau.ac.in/pdf/pmfby.pdf

[50]Government has pledged to bear even if balance premium is 90 per cent.

[51]Information is mostly retrieved from: https://www.linkedin.com/pulse/agricultural-insurance-microinsurance-nepal-mosleh-ahmed

[52]http://www.agrifinfacility.org/crop-loan-insurance-pakistan

[53]http://www.aib.gov.lk/rice_insurence_schemes.html

Annex Table 13: Food Reserve and Public Food Distribution System of SAARC Countries

Country	Concerned Authority	Status of PFDS
Afghanistan	Food Committee of National Medicines and Food Board (NMFB) Ministry of Public Health (MoPH)	• Food security in Afghanistan is highly dependent on international relief assistance. • NMFB provides logistic support to food assistance programmes operated by international humanitarian agencies such as the World Food Programme (WFP), European Civil Protection and Humanitarian Aid Operations (ECHO), United States Department of Agriculture (USDA), etc. • International relief assistance programmes implement multi-faceted and multi-year activities such as Food for Work (FFW), Food for Education (FFE), and Food for Training, in partnership with the Government of Afghanistan. • WFP is the largest food aid programme in Afghanistan, distributing food to 3.7 million needy people annually. • Poor physical connectivity, security concerns and political instability are major constraints facing the PFDS in Afghanistan.
Bangladesh	Food Planning and Monitoring Unit (FPMU) Directorate of Food, Ministry of Food	• Primary objective of PFDS is to maintain adequate rice and wheat stock through procurement and import to support distribution. The mandate is to provide food support to the marginalised and balance the interest of consumers (by influencing market price) and producers (through protection by means of procurement price). • PFDS has nine well-defined channels for distribution of food: four monetised channels are – Open Market Sales (OMS), Essential Priority (EP), Other Priority (OP) and Large Employers' Programmes. The five non-monetised channels are – FFW, Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF), Test Relief (TR) and Gratuitous Relief (GR). • PFDS in Bangladesh has worked reasonably well in servicing its mandate (Rahman and Khaled, 2012).
Bhutan	Food Corporation of Bhutan (FCB)	• Maintains centralised system of food supply through nationwide distribution and sales network (FCB has about 22 depots across the country). • Ensures price stabilisation through effective procurement by managing a network of fair price shops where procured food items are sold at lower price. • Construction of warehouses under the supervision of FCB has improved food storage situation significantly. • FCB provides logistic support to international relief missions, such as the hunger eradication projects operated by the WFP, and school-feeding programmes.
India	Food Corporation of India (FCI) – the central government agency and state governments in India	• FCI undertakes procurement of wheat and paddy under price support, and rice under statutory levy scheme. Wheat and rice are allocated to the state governments for retail sale through non-PDS (public distribution systems) channels under open market sales schemes (OMSS). • Under the Targeted Public Distribution Scheme (TPDS) Department, the central government provides food subsidy to the state government on decentralised procurement of foodgrains and for maintenance of buffer stock. • In the 12th Five-Year Plan, Department of Food and Public Distribution has prioritised construction of godowns, computerisation of PDS opeartions, strengthening of PDS and capacity building, village grains bank scheme, construction of fair price shops, assistance to warehouse development, and training and research initiatives. • Primary objectives of the government procurement policy are to ensure availability and affordability of foodgrains to the vulnerable populace and provide price support in the form of Minimum Support Price (MSP) to the farmers. • State governments allocate the food within the states, identify families below the national poverty line, issue ration cards, and supervise the fair price shops.
Nepal	Nepal Food Corporation (NFC), Ministry of Commerce and Supplies	• Maintains buffer stocks through procurement. • Throughout harvest season, NFC procures foodgrains from both farmers and traders in producing-regions, and then sells the grains to the marginalised groups at lower than market prices during price-hikes. • NFC acts as the active logistics provider for the national food safety net programmes and food security programmes operated by international agencies such as the WFP.

(Annex Table 13 contd.)

(Annex Table 13 contd.)

Country	Concerned Authority	Status of PFDS
		• Since the beginnings of Foodgrain Buffer Stock Programme in 2006, NFC has been delivering foodgrains to food-deficit districts specified by the Ministry of Commerce and Supplies. • PFDS run by NFC has not always been able to function efficiently during emergency. • NFC receives large amount of government subsidies; so there are scopes for raising efficiency of the NFC significantly.
Pakistan	Ministry of National Food Security and Research, Pakistan Agricultural Services and Supplies Corporation (PASSCO)	• PASSCO has four provincial food departments: (a) Punjab Food Department; (b) Sindh Food Department; (c) North-West Frontier Food Department; and (d) Balochistan Food Department. • Aforementioned departments mainly procure wheat and other agricultural commodities to ensure price stability by maintaining strategic reserves. • Price support programmes are in place for farmers cultivating wheat, paddy and other agricultural commodities. • Provincial food departments release specific amount of wheat from their stores for relatively lower agro-intensive regions. • The departments collaborate with agro-business agencies in the country to ensure food security.
Sri Lanka	Samurdhi Ministry, Ministry of Health, Nutrition and Indigenous Medicine and provincial councils	• Three major food-based welfare programmes are in place in Sri Lanka: (a) Samurdhi Programme; (b) Thriposha Programme; and (c) Mid-Day Meal Programme for School Children, targetting the poor (Mittal and Sethi, 2009). • Samurdhi Programme provides a monthly allowance for low-income households along with schemes to encourage savings in the formal banking sector (Wickramasinghe, 2014). • Provincial councils have the authority to undertake policies and programmes that suit local conditions. • These councils maintain adequate food stocks by collaborating with the government (LST, 2013) and implement suitable schemes to ensure food supply in respective provinces. • The councils put in place appropriate distribution mechanisms to cater to the needs of the poor. • Government of Sri Lanka introduced Mobile Rice Supply System by using state-owned Lanka Sathosa trucks to sell rice at reduced prices with an aim to meet demands for rice and to stabilise price of rice in the market. • However, Sri Lanka does not have a central, well-established and permanent government structure for PFDS.

Source: Authors' compilation from eclectic sources.[54]

Annex Table 14: Current Quantum of Reserve in the SFB

(Metric Tonnes)

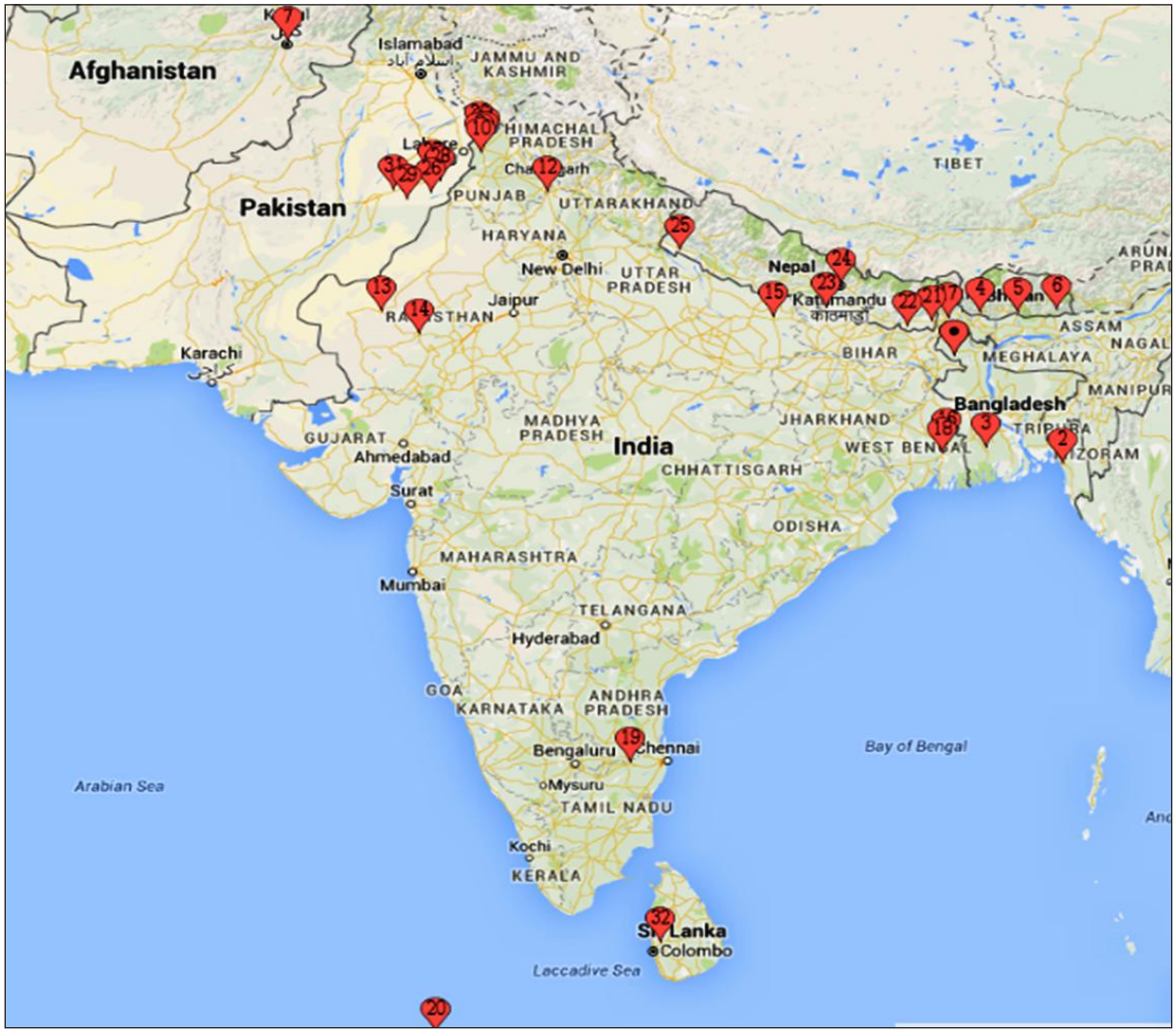
Country	Initial Reserve (2008-2011)	Revised Reserve Commitment (2011-Contd.)	Per cent of Share
Afghanistan	1,420	2,840	0.6
Bangladesh	40,000	80,000	16.5
Bhutan	180	360	0.1
India	153,200	306,400	63.0
Maldives	200	400	0.1
Nepal	4,000	8,000	1.6
Pakistan	40,000	80,000	16.5
Sri Lanka	4,000	8,000	1.6
Total	**243,000**	**486,000**	**100.0**

Source: Department of Food and Public Distribution, India.[55]

[54]http://www.passco.gov.pk/category/stock-control/; http://www.finance.gov.pk/survey_1415.html; http://fci.gov.in/procurements.php; http://www.nfc.com.np/introduction.php; www.nbr.gov.bd/SRO_customs.php?lan=eng; http://www.bafra.gov.bt/; http://www.dgfood.gov.bd/site/page/1ae7897f-3fa4-45f9-8427-325778089aec/Open-MarketSale; http://moph.gov.af/en/page/579; http://fpmu.gov.bd/agridrupal/policy-and-planning-frameworks; http://faostat3.fao.org/browse/area/*/E

[55]http://dfpd.nic.in/saarc-food-bank.htm

Annex Figure 2: Google Snapshot of the Locations of Warehouses under the SAARC Food Bank



Source: Authors' creation using the data in Table 1 from Google Map (16 April 2016).

Annex Table 15: Reserve Adequacy Status of the SFB for Different Levels of Production Shortfall of Foodgrains Compared to Previous 3-Years Average (2012-2014)

Country	Average Production (Last 3 Years)	Production Shortfall				Reserve Amount	Reserve Adequacy (at Different % Shortfalls)			
		8%	5%	3%	1%		8%	5%	3%	1%
	(Metric Tonnes)						Percentage (of 486,000 MT)			
Afghanistan	5,733,333	457,029	286,667	172,000	57,333	2,840	106	170	283	848
Bangladesh	52,666,667	4,207,484	2,633,333	1,580,000	526,667	80,000	12	18	31	92
Bhutan	82,962	6,637	4,148	2,489	830	360	7317	11716	19527	58581
India	250,000,000	20,166,667	12,500,000	7,500,000	2,500,000	306,400	2	4	6	19
Maldives	-	-	-	-	-	400	-	-	-	-
Nepal	6,666,667	535,478	333,333	200,000	66,667	8,000	91	146	243	729
Pakistan	31,000,000	2,480,075	1,550,000	930,000	310,000	80,000	20	31	52	157
Sri Lanka	3,933,333	315,945	196,667	118,000	39,333	8,000	154	247	412	1236

Source: Authors' calculation using data from FAOSTAT (2016).

Annex Table 16: Reserve Adequacy Status of the SFB at Different Levels of Production Shortfall of Foodgrains Compared to Previous 5-Years Average (2010-2014)

Country	Average Production (Last 5 Years)	Production Shortfall				Reserve Amount	Reserve Adequacy (at Different % Shortfalls)			
		8%	5%	3%	1%		8%	5%	3%	1%
	(Metric Tonnes)						Percentage (of 486,000 MT)			
Afghanistan	5,300,000	422,441	265,000	159,000	53,000	2,840	115	183	305	916
Bangladesh	52,200,000	4,165,479	2,610,000	1,566,000	522,000	80,000	12	19	31	93
Bhutan	82,078	6,566	4,104	2,462	821	360	7395	11833	19721	59163
India	242,000,000	19,620,000	12,100,000	7,260,000	2,420,000	306,400	2	4	7	20
Maldives	-	-	-	-	-	400	-	-	-	-
Nepal	6,360,000	509,870	318,000	190,800	63,600	8,000	95	153	255	764
Pakistan	31,000,000	2,478,768	1,550,000	930,000	310,000	80,000	20	31	52	157
Sri Lanka	4,000,000	320,695	200,000	120,000	40,000	8,000	151	243	405	1214

Source: Authors' calculation using data from FAOSTAT (2016).

Annex Table 17: Reserve Adequacy Status of the SFB at Different Levels of Production Shortfall of Foodgrains Compared to Previous 7-Years Average (2008-2014)

Country	Average Production (Last 7 Years)	Production Shortfall				Reserve Amount	Reserve Adequacy (at Different % Shortfalls)			
		8%	5%	3%	1%		8%	5%	3%	1%
	(Metric Tonnes)						Percentage (of 486,000 MT)			
Afghanistan	5,057,143	403,961	252,857	151,714	50,571	2,840	120	192	320	960
Bangladesh	51,142,857	4,079,103	2,557,143	1,534,286	511,429	80,000	12	19	32	95
Bhutan	80,641	6,451	4,032	2,419	806	360	7527	12044	20073	60218
India	237,142,857	19,071,429	11,857,143	7,114,286	2,371,429	306,400	3	4	7	20
Maldives	-	-	-	-	-	400	-	-	-	-
Nepal	6,228,571	498,352	311,429	186,857	62,286	8,000	97	156	260	780
Pakistan	31,428,571	2,522,025	1,571,429	942,857	314,286	80,000	19	31	52	155
Sri Lanka	3,942,857	315,087	197,143	118,286	39,429	8,000	154	246	411	1232

Source: Authors' calculation using data from FAOSTAT (2016).

Annex Table 18: Change in Paddy and Wheat Production Compared to Previous 3-Years Average

(in Per cent)

Country	2008	2009	2010	2011	2012	2013	2014
	Change in Paddy Production						
Afghanistan	16.4	13.6	11.4	4.5	-24.6	-16.7	-4.3
Bangladesh	13.3	10.5	8.8	4.8	1.8	2.2	2.7
Bhutan	8.0	-11.2	-1.5	9.6	8.0	3.4	-2.4
India	5.4	-5.7	0.8	10.8	8.2	3.9	-0.7
Nepal	5.9	11.3	-3.5	4.2	17.0	-0.3	7.9
Pakistan	26.0	15.1	-25.4	-34.0	-30.0	7.7	13.6
Sri Lanka	19.6	5.9	21.1	-1.2	-2.6	15.1	-18.0
South Asia	7.8	-0.9	2.0	6.6	5.1	3.7	0.5
	Change in Wheat Production						
Afghanistan	-35.0	45.1	11.7	-16.8	16.7	19.6	18.4
Bangladesh	3.4	10.0	11.3	12.4	9.7	31.2	21.2
Bhutan	-40.3	-43.5	-23.8	23.8	-3.2	-1.5	-6.6
India	10.3	8.2	3.1	8.6	14.6	6.9	3.0
Nepal	8.4	-10.0	5.4	17.1	19.2	0.7	6.2
Pakistan	-5.0	10.0	2.4	10.7	-3.0	0.9	6.9
Sri Lanka	-	-	-	-	-	-	-
South Asia	-1.8	9.1	3.9	5.0	7.5	4.9	4.0
	Change in Paddy and Wheat Production						
Afghanistan	-29.1	40.7	11.7	-13.9	11.2	15.1	15.9
Bangladesh	13.1	10.5	8.8	4.9	1.9	2.7	3.1
Bhutan	2.2	-14.3	-3.3	10.6	7.2	3.1	-2.7
India	7.0	-1.0	1.7	10.0	10.5	5.0	0.7
Nepal	6.6	5.6	-1.1	7.5	17.6	-0.1	7.4
Pakistan	3.5	11.5	-5.9	-2.3	-9.6	2.3	8.3
Sri Lanka	19.6	5.9	21.1	-1.2	-2.6	15.1	-18.0
South Asia	4.3	2.7	2.7	6.0	6.0	4.1	1.8

Source: Authors' calculation using data from FAOSTAT (2016).

Note: 1. Production data on wheat was missing for Sri Lanka. 2. Maldives does not produce wheat and rice.

Annex Box 2: Draft Guidelines for Price Determination Presented at the 4th SFB Board Meeting

A. Guideline for countries which normally do not export foodgrains or do not publish export prices	B. Guideline for countries which export foodgrains and publish export prices
Price per unit = Cost of maintaining reserve × (1 + α); where α is the margin to be agreed, and which would be 2 to 3 per cent Cost of maintaining reserve = Collection price + Transportation cost + Storage cost + Margin of losses Further, Collection price = Yearly average price of foodgrains + β × (Average in the preceding quarter – Yearly average); where β would be agreed based on empirical figures Transportation cost = Cost of transporting foodgrains from collection point to godown/silo. Costs of transportation from the release point (silo/godown) to the port would have to be added based on national freight rates	1. During emergency: Price per unit = Export price per unit × (1-ʎ); where ʎ is the percentage of preferential treatment to be agreed regionally (3 to 5 per cent) 2. During normal time food shortage: Price per unit = Export price per unit × (1-ʎ) + η × (Average export price per unit in the preceding season – Yearly average export price per unit); where the value of η is to be agreed regionally, and could be in the range of 0.3-0.5

Source: Rahman and Khaled (2012); Pant (2014).

Recent CPD Working Papers

Paper 112 Advancing the Interests of Bangladesh's Migrant Workers: Issues of Financial Inclusion and Social Protection

Paper 111 Bali Ministerial of the WTO and the Way Forward: Safeguarding LDC Interests

Paper 110 Trade and Transport Facilitation in Bangladesh: An Audit of the State of Play

Paper 109 Recent Developments in Myanmar and New Opportunities for Sub-Regional Cooperation: A Bangladesh Perspective

Paper 108 Recent Developments in Myanmar: Opportunities for Sub-Regional Energy Cooperation

Paper 107 Bilateral Free Trade Agreements (FTAs): Opportunities and Challenges for Bangladesh – Framework Issues

Paper 106 Minimum Wage in the RMG Sector of Bangladesh: Definition, Determination Method and Levels

Paper 105 Revisiting the PRSP Experience in Bangladesh: Perspectives on Representation, Accountability and Inclusiveness

Paper 104 Least Developed Countries (LDCs) in the Global Value Chain (GVC): Trends, Determinants and Challenges

Paper 103 China and the Least Developed Countries: An Enquiry into the Trade Relationship during the Post-WTO Accession Period

Paper 102 Innovation and Additionality for Development Finance: Looking at Asia

Paper 101 Analytical Review of Bangladesh's Macroeconomic Performance in FY2012-13 (First Reading)*

*Available on web only

cpd.org.bd cpd.org.bd cpdbd CPDBangladesh

CENTRE FOR POLICY DIALOGUE

House - 6/2 (7th & 8th floors), Block - F
Kazi Nazrul Islam Road, Lalmatia Housing Estate
Dhaka - 1207, Bangladesh
Telephone: (+88 02) 9141734, 9141703, 9126402 & 9143326
Fax: (+88 02) 9136579
E-mail: info@cpd.org.bd
Website: www.cpd.org.bd