The role of agriculture in alleviating poverty in developing countries has been a contentious issue. The dominant paradigm focuses on manufacturing and services sectors as the drivers of growth and alleviation of poverty, and in this context, agriculture is considered as the ‘residual’ sector. However, it is very important to understand how structural transformation takes place in developing countries with a declining share of agriculture in the gross domestic product (GDP), and how it affects agricultural productivity. A critical question also emerges, whether augmented agricultural productivity can be instrumental in reducing poverty in developing countries.

In a cross-country and over-time framework, the relationship between the share of agriculture in GDP (agricultural value-added per worker), as shown in the scatterplot, appears to be negative. This scatterplot has been generated using data from the World Bank’s WDI for 121 countries for 36 years (1980-2015). Countries much closer to the global trend line are able to raise agricultural productivity with a reduction in the share of agriculture in GDP at a pace reflected by the ‘productivity association’ of the global trend line. The scatter plot also shows the relative positions of Bangladesh, China, India and Pakistan in 1980 and 2015, as all these four countries moved up along the ‘productivity association’ during this period. In South Asia, Pakistan in 1980 was very close to the trend line, and by 2015 went above the trend line. However, in 2015, the share of agriculture in GDP in Pakistan was much higher than those of Bangladesh, India and China, indicating much slower progress in structural transformation in Pakistan compared to those in Bangladesh, China and India. Though India in 1980 and 2015 was in much better positions than those of Bangladesh, the rate of progress of Bangladesh, during 1980 and 2015, along the productivity association was better than that of India. This is reflected by the fact that, compared to the position in 1980, by 2015, while Bangladesh moved closer to the trend line, India moved further away. Also, China, while drastically reducing its share of agriculture in GDP during 1980 and 2015, was able to move closer to the trend line by 2015.
Does agricultural credit help in raising agricultural production? 
Empirical evidences from Bangladesh 
Sayema Haque Bidisha and Bazlul Haque Khondker

In the context of least developed countries, lack of access to financial services is often argued to have constrained poor individuals from utilizing their economic potentials. It is also argued that credit helps the farmers to invest in modern methods of cultivation and aids them in terms of better cultivation practices, marketings, storage etc. For the developing countries like Bangladesh, credit markets are often underdeveloped both in terms of coverage and size of loans, which has forced the credit-constrained households to avail credit from informal sources at high rate of interest and also with unfavorable terms and conditions. In order to facilitate the growth and productivity of agriculture sector, it is therefore important to understand the role of credit in facilitating agricultural production.

Data of Household Income and Expenditure Survey 2010 (HIES 2010) shows that, in terms of the overall market structure of credit, Bangladesh Krishi Bank along with other formal public financial institutions act as a source of around one-fourth of agricultural credit, informal sources supply 8 percent of agricultural credit whereas microfinance institutions serve as the key source by supplying the remaining. From HIES data, it can also be inferred that, on an average, households borrow 30,210 taka as credit, where the borrowing from formal sources is the highest, 41,000 taka on average. In terms of interest rate, formal sector charges relatively low interest rate, around 14 percent per year, where the interest charged by the MFIs was 31.4 percent per annum. In case of informal sources, when positive interest is charged, the rate is however quite high, around 21 percent. HIES also asked the respondents whether they wanted to borrow more and around 29 percent responded positively with the highest response found among the micro-borrowers.

In Table 1 a simple comparison has been made between households who has availed microcredit and those who has not. It is interesting to find that in terms of the gender of household head, for the households without microcredit take up, female household heads were more prominent—which is contrary to our prior expectation. Around 35 percent households were found to be literate with greater proportion of literates found in the 3rd quinatiles of micro loan size. In terms of land holding, on an average households were found to possess 37 decimals of land. Household without microloan were found to have greater possession of cultivable land- those without microloan possessed around 43 decimals

Table 1: Summary Statistics by Micro-borrower Groups and Microloan Sizes

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean [Standard Deviation]</th>
<th>Microcredit Take-up</th>
<th>Microloan Size Quintiles</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
<td>First</td>
</tr>
<tr>
<td>Household size</td>
<td></td>
<td>4.823</td>
<td>4.792</td>
<td>4.662</td>
</tr>
<tr>
<td>Instrumented</td>
<td></td>
<td>[1.845]</td>
<td>[1.790]</td>
<td>[1.840]</td>
</tr>
<tr>
<td>Whether HH head is female (dummy)</td>
<td></td>
<td>0.072</td>
<td>0.026</td>
<td>0.029</td>
</tr>
<tr>
<td>Whether HH head is literate (dummy)</td>
<td></td>
<td>0.385</td>
<td>0.357</td>
<td>0.331</td>
</tr>
<tr>
<td>Total cultivable land owned (decimals)</td>
<td></td>
<td>42.692</td>
<td>36.579</td>
<td>38.065</td>
</tr>
<tr>
<td>Access to electricity (dummy)</td>
<td></td>
<td>0.419</td>
<td>0.386</td>
<td>0.374</td>
</tr>
<tr>
<td>Instrument</td>
<td></td>
<td>[0.493]</td>
<td>[0.488]</td>
<td>[0.486]</td>
</tr>
</tbody>
</table>

Source: HIES 2010

Table 2: Effect of Microcredit Take-up on Crop Production (OLS and 2SLS estimates)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Crop production (in ’000 BDT)</th>
<th>Crop production (in ’000 BDT)</th>
<th>Crop production (in ’000 BDT)</th>
<th>Crop production (in ’000 BDT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reg (1)</td>
<td>Reg (2)</td>
<td>Reg (3)</td>
<td>Reg (4)</td>
</tr>
<tr>
<td></td>
<td>Second Stage</td>
<td>Second Stage</td>
<td>Second Stage</td>
<td>Second Stage</td>
</tr>
<tr>
<td>Microcredit take-up</td>
<td>6.54***</td>
<td>4.26*</td>
<td>7.20***</td>
<td>66.70***</td>
</tr>
<tr>
<td>Observations</td>
<td>2,492</td>
<td>2,190</td>
<td>2,492</td>
<td>2,190</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>instrumented by avg. distance</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>IV F-stat</td>
<td>N/A</td>
<td>16.23***</td>
<td>N/A</td>
<td>16.19**</td>
</tr>
<tr>
<td>Robust ci in parentheses; ***</td>
<td>p&lt;0.01, ** p&lt;0.05, * p&lt;0.1</td>
<td>The 1st stage regression includes a number of explanatory variables, e.g. whether HH head is female, whether HH head is literate, total cultivable land owned in decimals, whether HH have access to electricity.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Effect of Microcredit Take-up on Crop Production (OLS and 2SLS estimates)

The analysis revealed strong positive impact of microcredit take up on agricultural production. Credit can increase agricultural production by as high as 66,700 BDT (Regression 4, Table 2). Thus, instead of a dummy of microcredit take up, similar models (OLS and 2SLS) with the size of micro credit loan (in thousand BDT) as independent variable is applied.

Despite the structural transformation of Bangladesh economy towards industry and service sector, the importance of agriculture in the context of generating employment and meeting food requirement still remains crucial. Given the robustness of findings in terms of suitable econometric methodology, this study has further emphasized the importance of appropriate policies in ensuring hassle free and cheap access to credit for farmers, particularly to the marginal and small ones whose production is often suffered due to lack of credit access. In this context, a number of recommendations in terms of facilitating the supply of credit in increasing production can be considered.

Given a positive association between institutional credit and agricultural production, it can be recommended to expand the disbursement of agricultural credit particularly to small farmers. In addition, while devising their credit portfolio a careful balance must be maintained between both formal and quasi formal institutions.

It is often argued that timely sanction of credit and hassle free advance is more preferred by the farmers than lower rate of interest or any other waiver on interest. In case of approaching the credit from public institutions, the potential recipient has to undergo unofficial transaction cost like bribe or has to spend longer time due to bureaucratic process. Therefore, an important policy issue will be to streamline the bureaucratic processes in public institutions.

Marginal and poor farm households, not having access to formal lending sources except MFIs, utilize the non-formal credit for agricultural purposes. But this installment based credit is not suitable for ‘Point input Point output’ type of agricultural, especially crop activity. Steps should be taken so that MFIs can arrange appropriate agricultural (crop) credit scheme for the marginal farmers and landless sharecroppers.

Households, mainly the low income ones use credit (mostly collected from informal sources) to buy necessary food items. When the food security situation becomes worse in bad years due to flood or bad harvest, they often use credit meant for agricultural production for meeting food requirements and their share of consumption loans often increases. Formal institutions therefore should incorporate such seasonal factors in devising credit and consider the provision of relaxation of collateral for small loans in this context.

Note: This write up is a shorter version of the paper: “Returns to Agricultural Microcredit: Quasi Experimental Evidence from Bangladesh” (Bidisha, S.H.; Khan, A.; Khondker, B.H. and Imran, K), vol. 38, no.4, Bangladesh Development Studies.

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...the constraints of small farmers need attention to enable them to raise their productivity and change the face of agriculture..."

Dr. Mustafa K. Mujeri is the Executive Director of Institute for Inclusive Finance and Development (InM). He was the Director General of BIDS and the Chief Economist of the Bangladesh Bank. He also served as the Poverty Analysis Advisor of UNDP in Cambodia and Research Director of the Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP). He has wide ranging professional experience in research analysis and development issues in different UN and other international organizations. For the November 2016 issue, SANEM speaks to Dr. Mujeri about the agricultural performance of Bangladesh over the years in terms of productivity and change

SANEM: How would you describe the agricultural growth performance of Bangladesh for the last four decades?

MKM: Since Independence, Bangladesh’s agriculture has experienced significant transformation in structure, productivity and output growth. The ‘Green Revolution’ of the 1960s was the main driver, which was surpassed later at both macro and sector levels in later years. One major element of the reform agenda of the period was removal of various restrictions and liberalisation of the input and output markets since the 1980s facilitating participation of the private sector in farming decisions. These reforms were vigorously pursued in the 1990s. The positive impact of these two elements—technological innovation and shift in policy regime—was evident from growth in agricultural production especially of rice, the main crop. However, agricultural diversification was slow due mostly to absence of favourable conditions. Overall, we may say that, especially given the resource constraints in agriculture such as land and frequent incidence of weather uncertainty including flood and natural disasters, the agriculture sector has performed well with a respectable growth performance. This no doubt is a big achievement. Obviously, a more dynamic agriculture sector would have contributed more toward poverty reduction, rural dynamisms and overall growth performance.

SANEM: Bangladesh has recently shifted from a rice importing country to a rice exporting country. What factors have played the key role in this transformation?

MKM: As I have said earlier, Bangladesh’s agricultural growth is dependent mostly on the performance of rice sector. The production of rice is more than tripled in recent years. Therefore, increased production is a major factor which is due to adoption of improved technology, better irrigation and water management and adoption of better policies. In addition, we also need to take into account changes in food consumption pattern especially with rising household incomes and rapid urbanisation. The data from Household Income and Expenditure Surveys show a consistent decline in per capita rice consumption in the urban areas and rising consumption of non-rice crops and other value added food items. Although no such trend is observed in the rural areas, similar declining trend may set in the rural areas without much delay with rapid reduction in rural poverty and rise in rural incomes. Such declining trend in dependence on the staple food like rice is quite natural since, with rising incomes, people would like to consume a diversified diet rich in protein and other nutrients. As a result, the constraints of small farmers need attention to enable them to raise their productivity and change the face of agriculture in the country.

SANEM: Bangladesh has experienced a significant increase in the production of fish and vegetables. What were the key factors behind this success?

MKM: It is well established that farmers, especially small farmers, take rational decisions and respond quickly to positive incentives. As I told earlier, the consumption pattern of the people are changing rapidly in response to rising incomes and rapid urbanisation. This has been raising the consumption of vegetables, fish and similar items rapidly. As a result, their prices are also rising providing positive incentives to the farmers to increase the production of these food items. Thus, a major factor behind the rising production of fish and vegetables is the price response of the farmers. One should, however, also note the role of government policy of keeping the rice price relatively low in view of the politically sensitive nature of price rise for this staple crop. Therefore, government policy itself changes the relative price of rice and other competing crops against rice itself. It is obvious that rational farmers would increase production of fish and vegetables in response to price incentives by adopting new technologies such as fish culture and other yield-raising practices.

SANEM: Bangladesh has successfully dealt with seasonal hunger. How significant a role did our agricultural performance play in this regard?

MKM: The phenomenon of seasonal hunger has significant geographic concentration and it mostly occurs in locations lacking income earning opportunities in relevant seasons. This slow rate has been induced by production cycle. Therefore, creating alternative income earning opportunities during lean seasons and measures to reduce income fluctuations over different seasons would help reduce seasonal hunger. In such situations, both agriculture and non-agriculture sectors can help to meet the challenge. The complementary and mutually supportive role of both these sectors has enabled Bangladesh to deal with seasonal hunger. Adoption of agricultural technology such as adoption of early maturing rice varieties, crop diversification, growing minor crops during the period between harvesting and sowing of two major crops, expansion of non-crop agricultural activities and similar other innovations have helped agriculture to play its role. This is supplemented by expansion of off-farm opportunities during lean seasons and better utilisation of seasonal migration opportunities.

SANEM: What are the policy issues to be addressed?

MKM: Bangladesh needs to make a rapid transition to ‘new agriculture’ which will support our journey to prosperity. For this, we have a number of challenges. In terms of technology, we need to adopt new technologies. Environmental issues related to agricultural practices are important for productivity and sustainability of agriculture since agricultural practices have significant implications on loss of biodiversity, land degradation, deforestation, water availability and purity, and other environmental services. Moreover, agricultural production and rural livelihoods are highly dependent and vulnerable to environmental stresses, shocks, food price volatility, and climate change. Similarly, little is understood on how agricultural practices interact with agriculture and rural economy, and how effectively environment-friendly interventions in the small farmer-dominated agriculture in Bangladesh can contribute towards achieving food security and sustainable development. The bankers need to realise that these are highly context-specific and need in-depth analysis of multiple interactions. The food marketing and distribution system is also undergoing rapid transition with the emergence of supermarket chains and contract farming; the implications of which for the poor farmers are mostly unknown.

I believe, there still exist strong arguments for introducing land reforms and strengthening property rights of the rural poor in Bangladesh. These policies will lead to increased investment and contribute to agricultural growth and more equitable development.

SANEM: What policy suggestions would you recommend to address these challenges?

MKM: The challenges of agricultural transformation of Bangladesh in this globalised world are multiple and complex, both domestic and global. Moreover, we need to foresee the challenges and their possible impacts. As I have told earlier, many of these challenges are new and we need to explore the underlying dynamics of these challenges. The policy prescriptions should address these dynamics in an integrated manner, keeping both macro and micro dimensions in view. In the process, lessons from regional and country experiences could add important dimensions.

SANEM: Climate change is a big concern globally. Is Bangladesh ready to meet the challenges of climate change?

MKM: Bangladesh is one of the most climate change vulnerable countries in the world and agriculture will have to share the biggest burden of these changes. Moreover, the impact of climate change is somewhat uncertain and one cannot predict the outcomes accurately. What is important for our agriculture is to improve the response mechanism to climate change stress through technology and other adaptive mechanisms. Building resilience will be the key challenge.

SANEM: What lessons can be taken from other developing countries like Thailand, China, South Korea, etc to help improve agricultural productivity?

MKM: A major factor behind the success of these countries, which we call ‘East Asian Miracles’, has been their favourable initial conditions and pursuit of prudent policies providing right incentives. During their initial periods, agriculture in these countries provided the required dynamism for faster growth and prepared the stage for smooth take-off to higher growth trajectories. Bangladesh must also transform its agriculture to spur more inclusive growth and development.

SANEM: Thank you for your time.

MKM: My pleasure.
Ninth South Asian Economic Summit held in Dhaka

The ninth South Asian Economic Summit titled “Reimagining South Asia in 2030” was held on the 15th & 16th October at Le Meridien, Dhaka. The summit was organized by Centre for Policy Dialogue (CPD) of Bangladesh and co-organized by Institute of Policy Studies of Sri Lanka (IPS), Research and Information System for Developing Countries (RIS) of India, South Asia Watch on Trade, Economics and Environment (SAWTEE) of Nepal and Sustainable Development Policy Institute (SDPI) of Pakistan. The first day of the two-day summit was on “Is Political Leadership in South Asia Ready for Implementing the 2030 Agenda?” and was followed by a later session on “Sustainable Transformation of South Asian Economy by 2030: What are the Possible Pathways?” The second day of the summit started with discussing SDG Implementation Challenges in South Asia and Role of Global Partnerships and was later continued with parallel discussion sessions. Dr. Selim Raihan was a panelist at the session “Financing Development in South Asia: Avenues and Institutional Arrangements”. The summit was also attended by Farazi Binti Ferdous, Research Fellow, SANEM and Mohammad Moshiur Rahman, Senior Research Associate, SANEM.

First session of SANEM-ESC Dialogue held at the University of Dhaka

South Asian Network on Economic Modeling (SANEM) and Economics Study Center (ESC), University of Dhaka jointly organized the 'First session of SANEM-ESC dialogue’ on 6th October, 2016 at University of Dhaka. The main theme of the session was, “Dynamics of Economic Growth: Bangladesh Perspective”. Md. Wahid Ferdous Ibon (Research Associate, SANEM) made a presentation on the main theme as the key speaker, where he discussed the growth dynamics of Bangladesh economy over the last 44 years. Md. Jilur Rahman (Research Associate, SANEM) also shared his research experiences with the audience. Among others, Muhammad Nahian Bin Khaled (President, ESC) and students from the Department of Economics, University of Dhaka were present in the program.

SANEM Lecture on ‘What does BREXIT mean for Bangladesh and other Developing Countries?’ held at SANEM premises

SANEM lecture on ‘What does BREXIT mean for Bangladesh and other Developing Countries?’ was held on Tuesday, 18th October, 2016, at SANEM premises. Dr. Selim Raihan, Professor, Department of Economics, University of Dhaka and Executive Director, SANEM and Dr. Mohammad A. Razzazee, Adviser and Head of the International Trade & Regional Cooperation Section at Commonwealth Secretariat chaired the event. Among other respected guests, Mr. Zillul Hye Razi, former Trade Advisor to the Delegation of the European Union in Bangladesh, Theresa Blanchet, Director, Drishi Research Center and faculties from the Department of Economics, University of Dhaka, attended the event. The lecture was organized as part of SANEM Lecture Series which is aimed to share and disseminate academic researches on current economic issues.

New Additions to SANEM Family

Dr. Sayema Haque Bidisha, Associate Professor in the Department of Economics, University of Dhaka, has joined SANEM as the Research Director in October, 2016. Dr. Bidisha received her Bachelor’s and Master’s in Economics from University of Dhaka. She also obtained her MSc. in Economics from the University of Bath, UK and earned PhD in Labour Economics from the University of Nottingham, UK. Her research interest lies on development economics, labor economics and environmental economics. Dr. Bidisha has worked with several international and national organizations including World Bank, FAO, ILO, IDRC, InM.

Mr. Samiul Ahsan has joined SANEM as Senior Communications Manager in October. He has previously worked at GoB-DFID legacy project, EEP/Shiree. Mr. Ahsan completed his Master of Research in Accounting from the University of Dundee, Scotland. His expertise lies in communications, PR and program management.

SANEM Luncheon with Editors

SANEM hosted a lunch meeting with business and economic editors from different media houses, on 24th October 2016, at a prominent restaurant in Dhaka. The aim of the meeting was to build a closer working relationship and discuss SANEM’s outreach activities. In the meeting, different media personnel provided their valuable insights and guidelines for the Journalists’ Training Program on economic and trade related issues to be organized by SANEM in November 2016. Dr. Selim Raihan, Executive Director of SANEM, led the team representing SANEM at the meeting.

e-version: http://sanemnet.org/thinking-aloud/

SANEM Press Briefing on “The Future of Regional Integration in South Asia”

South Asian Network on Economic Modeling (SANEM) organized a press briefing on “The Future of Regional Integration in South Asia” on October 26, 2016 at SANEM conference room. Dr. Selim Raihan, Professor, University of Dhaka and Executive director, SANEM, revealed his critical observations on the slow progress of regional integration in South Asia before the media. Dr. Raihan discussed three important drivers (economic drivers, political economy drivers and extra-regional drivers) of deeper regional integration in this region and the need to focus on the effectiveness of SAARC, BBIN and other regional and sub-regional organizations for further regional assimilation of South Asian countries. He proclaimed that BBIN or BIMSTEC cannot be an alternative to SAARC and emphasized that the member countries shouldn’t abandon the SAARC process. Dr. Raihan also mentioned that, the political rivalry between India and Pakistan has often constrained the SAARC to be a functional regional forum. Hence South Asian countries should focus on bringing down the political tension among each other and the civil society, private sector and media have very important role to play in exerting pressure on the respective governments for regional stability. The press briefing ended with a Q&A session between Dr. Raihan and the distinguished guests. Dr. Sayema Haque Bidisha, Research Director, SANEM, Dr. Farazi Binti Ferdous, Research Fellow, SANEM and Mohammad Moshiur Rahman, Senior Research Associate, SANEM, were also present at the press briefing. The event was broadcasted live on the SANEM YouTube channel.