



CGPRT

Flash

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Short Article

Policy-Making Supported by Wheat Forecasting Model in Pakistan

The agricultural sector is the backbone of the economy and plays a vital role in the economic development of Pakistan. It contributes about 24 per cent towards the GDP of the country. The agricultural sector mainly depends upon the major crops grown in Pakistan of which, two of these crops (cotton and rice) are major foreign exchange earners. Wheat and rice are major food crops and wheat is one of the major crops grown in all the four provinces of the country, cultivated on 8.18 million hectares and accounting for 37.19 per cent of the total cropped area. As wheat is the principal staple food, its magnitude and size, particularly shortfalls in production, deeply influence the economy of the country.

To ensure food security, the government needs accurate, reliable and advance information concerning the status of the wheat crop ahead of the harvest and until the availability of the final estimates. This goal can be attained by making relevant forecasts of future crop area and yield and carrying out proper actions as suggested by the results.

Many agencies are involved in this work in Pakistan. The Pakistan Agricultural Research Council (PARC) is one of these agencies playing a leading role in agricultural research. The Biometrics Programme is one of three components of the Social Sciences Institute, placed at NARC, which is the federal component of PARC. This programme has undertaken considerable work on forecasting the area and yield of important crops, including rice.

Recently, the Biometrics Programme has developed a forecast model for wheat crop production. The forecast model is based on time series data of 28 years (1975-1976 to 2002-2003) collected from secondary sources. The performance of the forecast model as tested for area, yield and production of wheat was significant. By using this model policy makers can predict the yield of a particular crop or forecast area which will be sown in the next crop season.

The technique used for crop production forecasting is Ordinary Least Square (OLS) of regression analysis. Five equations (one for Pakistan and one for each of the four provinces) are used for wheat area and one equation to forecast the wheat yield in Pakistan. Production is estimated by multiplying area and yield forecasts.

The production of wheat depends upon a number of inputs/factors like fertilizer, water availability, rainfall, temperature and so on. The variables which have a linear relationship are kept for this model. The variables selected for the wheat area model are lagged area under wheat by one year and wheat procurement prices. The variables used in the wheat yield model are fertilizer consumption for wheat (kg/ha) and total water availability at farm level.

This model enables the policy makers to estimate the yield of wheat before harvest. The planners, with the help of this model, can also estimate the area of wheat that will be sown during the next crop season. The accurate forecasting of wheat area and production may support the policy makers and planners for making policy decisions regarding supply, demand and imports of wheat in the country.

The wheat area forecast model was tested for three years (2000-2003). It was observed that the estimated wheat area of Pakistan was 7 per cent and 4 per cent higher during 2001-2002 and 2002-2003 respectively, than the official target area of wheat.

The performance of the model was also tested for the yield of the wheat crop. It was found that the estimated wheat yield of Pakistan was 2 per cent and 6 per cent lower during the years 2001-2002 and 2002-2003 respectively, compared to the official estimated yield.

Written by Muhammad Asif Masood and Anver Javed, Pakistan Agricultural Research Council

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- Azhar, B.A., Chaudhry, G.M., and Shafique, M.A., 1973. A Model for Forecasting Wheat Production in the Punjab, Q.J. PIDE XIV (1):407-414.
- Granger, C.W.J., 1980. Forecasting in Business and Economics, Academic Press, Inc.
- Khan, M.I. and Khan, N.A., 1988. Rice Forecast Model of Pakistan, Gomal Univ. Journal Res. 8(1and 2): 95-105.

Flash **BREAKING**

Boosting Farm Income in Uzbekistan

The Asian Development Bank (ADB) has approved a US\$ 26 million loan to boost farm incomes in Uzbekistan by promoting more efficient and sustainable wheat production. The Grain Productivity Improvement Project will provide assistance to five wheat-producing provinces, covering wheat breeding, introduction of new wheat varieties, disseminating improved farming technologies, and strengthening the pest-monitoring program. ■

ADB, 2003. Boosting Grain Production in Five Provinces of Uzbekistan, Press Release (17 November 2003).

Bakpao Telo: Reducing Production Cost

Made of wheat flour, bakpao is a type of popular snack in Indonesia. To reduce flour imports, a businessman from Pasuruan, East Java, has developed bakpao telo made of 60 per cent sweet potato and 40 per cent wheat flour. Using this mixture, the taste of bakpao still meets the satisfaction of the consumer while production costs can be reduced. The price of sweet potato and wheat flour are Rp 450/kg and Rp 2,000/kg respectively. This offers further market opportunities for CGPRT crop farmers ■

Sinar Tani, 2003. Bakpao Telo, Terobosan Baru Penghemat Devisa (29 October - 4 November 2003).

Will Poor Farmers Benefit from GM Crops ?

Farmland devoted to genetically modified (GM) crops grew by 12 per cent last year. In fact, more than one-fifth of the global crop of soybean, corn, cotton and canola now consists of genetically engineered, or "biotech" crops. By 2005, ISAAA predicts the market value of GM crops will reach five billion dollars. Much of this boom is in South Asia, Latin America and Africa, where some proponents of sustainable agriculture-as in the North-fear their concerns have been overridden by links between the biotech industry and powerful development institutions like the World Bank and World Trade Organization. ■

Stapp, K., 2003. Influential Groups Push Growing Penetration of Biotech Crops, OneWorld South Asia (04 December 2003).

Agricultural Trade and Poverty

Agriculture and agricultural trade play a particularly important role in both the national economies and the food security of developing countries. Countries where more than 15 per cent of the population goes hungry spend more than twice as much of their export earnings to import food as more food-secure countries. Their poverty and limited trading activities constrict both their export earnings and their ability to buy more food on international markets. ■

FAO, 2003. Trade highlighted, <http://www.fao.org> (25 November 2003).

Unfair Support of Agricultural Policies Threaten the Livelihood of Poor Farmers

In 2002, direct support to farmers by countries belonging to the Organization for Economic Co-operation and Development (OECD) totaled around US\$235 billion, three quarters of the total OECD support estimate of US\$318 billion. Subsidies by this group of countries account for over 90 per cent of trade-distorting domestic support and export subsidies reported to the WTO. The figure is particularly striking if one considers that in high-income countries such as those belonging to the OECD, agriculture employs around 5 per cent of the labor force and contributes only 2 per cent to gross domestic product (GDP). In low-income countries, however, the sector provides around 70 per cent of the labor force with work and contributes 36 per cent to GDP.

Based on FAO, 2003. Subsidies, Food Imports and Tariffs; Key Issues for Developing Countries, FAO Media Office (23 September 2003).

Big Maize Market in China

Domestic maize consumption has increased by more than 40 per cent during the last decade. The increase has been due to the consistent increase in feed use for poultry and pork. As demand for poultry and pork is predicted to increase by 85 per cent and 45 per cent, respectively, between 1995 and 2020, then the demand for maize is also predicted to increase for feed use. Around 75 per cent of maize production in China is used for animal feed. To fulfill this increasing demand for maize, China is predicted to increase its imports, together with promoting domestic production.

Based on Meng, E. and Ekboir, J., 2002. Current and Future Trends in Maize Production and Trade, World Maize Facts and Trends, USDA.


call for contribution

Dear "CGPRT Flash" Readers,

This bulletin is intended to provide the most relevant and up-to-date socio-economic and policy information in order to help **improve the livelihood of the poor rural populations** who rely on the CGPRT crop sector in Asia and the Pacific.

It is **YOUR BULLETIN**, and only **YOUR CONTRIBUTIONS** will keep it alive and make it more and more relevant to **YOUR OWN NEEDS**.

Do not hesitate to send us News, Briefs, Short Articles, Events or Book Reviews concerning your country in Asia and the Pacific and the rural poor populations in particular in relation with the CGPRT sector. They will be published with full recognition of the author and their organization.

Warm Regards,

Dr. Robin Bourgeois
IS/DB Programme Leader

A Setback in the War against Hunger

Hunger is on the rise again after falling steadily during the first half of the 1990s. FAO's latest estimates signal a setback in the war against hunger. After falling by 37 million during the first half of the 1990s, the number of hungry people in developing countries increased by 18 million in the second half of the decade. Worldwide, 842 million people were undernourished in 1999-2001, the most recent years for which figures are available. This includes 10 million in industrialized countries, 34 million in countries in transition and 798 million in developing countries. Only 19 countries, including China, succeeded in reducing the number of undernourished throughout the 1990s. In 17 other countries, however, the trend shifted in the opposite direction and the number of undernourished people, which had been falling, began to rise. This group includes a number of countries with large populations, among them India, Indonesia, Nigeria, Pakistan and Sudan. At the other end of the scale are 26 countries where the number of undernourished people increased by 60 million or more during the same period.

Based on FAO, 2003. FAO Reports a Setback in the War against Hunger, <http://www.fao.org> (25 November 2003).

The Use of Biotechnology in Poor Marginal Areas

Estimates indicate that biotechnology on average could increase food production by 25 per cent in developing countries in the next 25 years. Therefore, developing countries are required to establish essential policies and institutions to enable using the power of biotechnology in further developing their agriculture. Such developments are required to tailor biotechnological development and application in harmony with the broader socio-economic development plan of the country, keeping important issues such as poverty alleviation and the protection of the environment in mind. These two issues are particularly important for those who live in marginal areas where poverty is extensive and the environment is particularly fragile. Tailoring biotechnology to the needs of the poor and developing appropriate risk management provisions have to go hand in hand with the development of the biotechnology industry in developing countries.

Based on Zakri, A.H., 2003. The Use of Agricultural Biotechnology in Marginal Areas and the Challenge to Developing Countries, International Symposium "Alternative Approaches to Enhancing Small-Scale Livelihoods and Natural Resource Management in Marginal Areas Experience in Monsoon Asia, Organized by United Nations University.

Flash EVENT



46th Maize Genetic Conference

11 - 14 March, 2004
Camino Real Mexico Hotel
Mexico City, Mexico

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Bio-Economic Household Modeling Course

19 - 23 April, 2004
The Mansholt Graduate School
Wageningen University,
Wageningen, Netherlands

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10th International Symposium on Pre-Harvest Sprouting in Cereals

7 - 11 June, 2004
The Links Country Park Hotel & Golf Club,
West Runton, Norfolk, U.K.

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Book Review

Frontiers of Development Economics - The Future in Perspective

Edited by G. Meier and J. Stiglitz. The World Bank, Washington, 2002.

Though not directly related with CGPRT crops in Asia and the Pacific, nor with the specific problems of poverty alleviation, this book is a must-read for all economists involved in rural development. It contains a series of key issue papers that were presented during a symposium held in Dubrovnik in 1999 as well as related comments. It is edited by recent Nobel Economic Prize winner and Senior World Bank Scientist Josef Stiglitz and Gerald Maier, both from Stanford University.

Reviewing this book was not an easy task. It is extremely dense with a compilation of 10 essays from 12 development economists, accompanied by comments from 15 more economists and rich appendices from the contributions of 9 Economic Nobel Prize winners. It addresses a wide range of topics from a strong academic angle and develops a critique of economic development theories where past ideas and results are reviewed and future challenges are discussed in order to identify and to further research the conditions for future development and poverty reduction. As such, each essay deserves an individual review.

In the introduction G. Meier sets out the tone of the book: it is about "Ideas", ideas for development, and all articles contribute to discuss ideas, either past ideas about development and development economics, referring to the thoughts and works of the "pioneers" or new ideas that represent the future programme of work for development economists.

The reader will find discussions of several important questions. For lovers of more theoretic and academic debates, I recommend the articles from Meier, from Crafts and from Grindle and the related comments. They provide extremely well documented information and references on the historical perspective of development economics, as well as challenging analyzes on the different approaches to development. The articles from Basu on the goals of development, from Idelman on false ideas in development theory, from Kanbur and Squire on the evolution of thinking about poverty and from Bardhan on institutions and distribution conflicts will give plenty of food for thought for those who are interested in reflections on the concept of development.

Discussion on past achievements and implications can be found in the stimulating essays from Thomas, reviewing the challenge of development and from Yusuf and Stiglitz. The latter synthesizes what we already know and what we still need to investigate in the field of development economics. There you will learn what the seven big questions about development that can be considered as being solved are and that the new challenges for the future revolve around governance and regulation at various levels and the management of human capital and natural resources. Finally, the last essay from Hoff and Stiglitz provides a framework to discuss these development issues in relation with the current economic theory.

All together the tone of the book puts emphasis on the need to develop more research on institutional change and coordination issues. It calls for wider use of real data in order to learn more from experience and enlarge our understanding of development challenges through the observed diversity of situations.

Maybe one criticism of this publication could be that the order of the contributions and their relations in terms of content is not always clear. It is hard to find a *fil directeur* and sometimes the reader can become confused about the succession of topics. Another point is "How we work up the ideas in our daily activities?" This question is a major one for professionals in developing countries who would wish to orient their activities according to the underlying tone of the book. Conducting more research is needed and the new generation of development economists will certainly respond to the challenges. But how will we use these responses to actually and significantly curb the trend? The new frontier of development economics is maybe a different one, the frontier between development economics and economic development.

Reviewed by Dr. Robin Bourgeois, IS/DB Programme Leader, CGPRT Centre, Bogor, Indonesia.