

TECHNICAL CHANGE AND YIELD VARIABILITY
IN NEPALESE AGRICULTURE

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of the Requirements for the Degree of
Master of Economics

by
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DECLARATION

I certify that this dissertation has not been presented, in part or in whole, for a degree at any other university.



(Subhakar Baidya)

ABSTRACT

For the last decade or so, Nepalese agriculture has been characterised by a declining trend in crop yields. Yields have been declining at the same time as the modern techniques of production embodied in high yielding crop varieties and chemical fertilizers have been emphasized within the country, and substantial increases in productivity have been achieved with the adoption of these techniques in many countries.

The objectives in the study are to identify factors affecting temporal as well as spatial variation in crop yields and to gain more understanding about the efficacy of seed-fertilizer technology in elevating the situation of the Nepalese agriculture from its continuing state of stagnation.

Systems of equations relating individual crop yields to seasonal rainfall and time trend were estimated. The relationship between aggregate yield and use of chemical fertilizers, high yielding varieties, irrigation and annual rainfall was also estimated. The time variable acts as a surrogate for technical change. Time series data from 1971 to 1980 for different sub-regions were combined for the estimation of parameters. Outputs and cropped areas of five principal crops were considered.

The findings of the study suggest that rainfall alone explains a large part of the fluctuations in crop yields. Inputs reflecting technical change such as high yielding varieties, chemical fertilizers and irrigation do not seem to have contributed to raising aggregate crop yields. It seems that technical change has not been firmly established at the aggregate level. Agriculture in Nepal in general is still at the traditional stage.

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Any errors or omissions found in this dissertation are my own.

GLOSSARY OF SYMBOLS AND ACRONYMS

AIC	: Agricultural Inputs Corporation, Nepal
APROSC	: Agricultural Projects Services Centre, Nepal
ha	: hectare
km ²	: square kilometre
m	: metre
mm	: millimetre
t	: tonne
°C	: degree celsius
kg	: kilogram
Rs	: Nepalese Rupees (A\$ 1 = Rs 15.00 approx)
Mar. Apr. May	: March-April-May
Jun. Jul. Aug	: June-July-August
Sept. Oct. Nov	: September-October-November
Dec. Jan. Feb	: December-January-February

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