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Economic Implications of Tomato Production in Naushahro Feroze District of Sindh Pakistan

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ABSTRACT: *In the present study, attempt was made to explore the economic implication of tomato in Nausharo Feroze Sindh. For this purpose 60 growers were selected from different villages of District Naushero Feroze of Sindh province during the year 2013 using survey method of study. The data on various costs, physical and revenue productivity were collected from 60 randomly selected tomato farmers. Result revealed that the education level of selected growers was in order of 25.00% primary (5years), 36.66% of middle (8years), 16.66% matriculate (10years) 3.33% educated from college and university, 1.70% graduate the 18.33% of tomato respondents were illiterate. Results further indicate that farmers incurred an average per hectare fixed costs. Rs 33187.00 include Rs 700.00 for land tax, Rs 32487.00 for rent of land. The results revealed that tomato farmers incurred an average per hectare cost of Rs 19780.75 as labor cost. An average per acre marketing cost of 30457.65 on tomato capital input used, and an average per acre marketing cost was Rs. 4191.73 On an average per acre spent a total cost of production of Rs. 87617.13. An average per acre Physical productivity was 186.00 in mounds. An average per acre Revenue productivity was Rs.158750.00 and the Net income was 71133.00 an availed input output ratio 1:1.81 it means that with the investment of Rs.1.00 in tomato enterprises they yielded Rs.1.81. The cost benefit ratio of the cultivation of tomato at 1:0.81 it means that the tomato growers fetched Rs.0.81 on each rupee investment of tomato. The poor production implies that the soil quality, inadequate canal water, insect pest and poor extension services could be the causes this low production. The empirical result indicates that significant increase in input of tomato in the study area could be traced mainly to use of latest technology.*

KEYWORDS: Tomato, cost, fruit yield, labor, net returns, and cost-benefit ratio.

INTRODUCTION

Tomato (*Lycopersicon esculentum Mill.)* is one of the most important vegetables worldwide. As it is a relatively short duration crop and gives a high yield, it is economically attractive and the area under cultivation is increasing. Tomato belongs to the Solanaceae family. Tomatoes contribute to a healthy, well-balanced diet. They are rich in minerals, vitamins, essential amino acids, sugars and dietary fibers. Tomato contains vitamin B and C, iron and phosphorus. Tomato fruits are consumed fresh in salads or cooked in sauces, soup and meat or fish dishes. They can be processed into purées, juices and ketchup. Canned and dried tomatoes are economically important processed products. Yellow tomatoes have higher vitamin A content than red tomatoes, but red tomatoes contain lycopene, an anti-oxidant that

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may contribute to protection against carcinogenic substances. On a global scale, the annual production of fresh tomatoes accounts for approximately 159 million tonnes. However, more than a quarter of those 159 million tonnes are grown for the processing industry, which makes tomatoes the world's leading vegetable for processing. Tomato production in Pakistan was 530 thousand tones during 2011. The nine largest producing countries account for 74.2 % of the world's yearly production -2013 (GOP, 2013).

Tomato is a vegetable crop of significant economic value in Pakistan. Generally speaking annual export of tomatoes from the country averaged about 9832 tonnes during the past 5 years. Yearly exports are given in Table 1. The lowest export figures in 2006/07 and 2007/08 are attributed to bad crop harvest and rendering exports un-economical. Pakistan exported tomatoes to a quantum of 5692 tonnes, and earned rupees 77 million during 2012. The area, production and average yield of tomatoes in Pakistan. Since 2000-01 to 2012, the area under tomato crop has increased from 27.9 to 50 thousand hectares and production has increased from 268.8 to 476.8 thousand tons. The present national yield of tomatoes based on ten years average is 10.1 tonnes/ha which is quite low. To obtain a potential yield, high yielding varieties and improved production technology have to be adopted (MINFAL, 2013)

Sindh's tomato production was recorded at 141,586 metric tonnes as compared to 114, 771 metric tonnes the previous year, according to official figures. Tomato has a three months crop cycle. Growers prepare its nursery in July for early sowing and then its harvest continues as late as February next year with a few gaps. On the supply side, onion, tomato and chilies are important crops. Pakistan's share in world tomato exports was negligible in 2011. At present Pakistan's exports are heavily focused on Middle East and Afghanistan markets. Therefore, there is a need to look for other markets to increase the tomato exports during the glut supply season (Ayesha *et al.* 2012).

Pakistan devoted 0.34 million hectares to produce 4.8 million tones of vegetables and condiments during 2003-04 (Government of Pakistan, 2004). Besides, Pakistan also earned valuable foreign exchange to the tune of $ 128.4 million by exporting different vegetables across the world including Middle East and South Asia during 2004-05 and $109.6 million in the previous year 2003-04, showing 17 percent increase. Major buyers of vegetables and fruits from Pakistan were Dubai, India, Afghanistan, Saudi Arabia and United Kingdom (EPB, 2006).

A research study was carried out on scientific line can only reveal the best combination of inputs to be applied to tomato crop to harvest higher yield. The tomato growers are hesitating to adopt new technology or make extra efforts unless they are sure that the additional cost incurred by them were repaid to them form higher production. A study of input-output analysis of tomato production can incline farmers for the adoption of modern cultural practices. This state of affairs tempted the researcher to carry out a study on tomato in the field of production economics.

Objectives

1. To analyze the current status of tomato production with the growth.
2. To find out the economic implications of tomato production in the study area.
3. To compute input, output and cost benefit ratio availability of tomato growers in the study area.
4. To identify the issues and suggest policy measures for sustainable tomato production.

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MATERIAL AND METHODS

Primary purpose of this chapter is to explain various tools and techniques in the selection of sample, collection, analysis and interpretation of data relating to research. Intend of this study was to investigate the existing tomato production in district Naushahro Feroze Sindh. Planned strategy was used to study the area, type and number of respondents without which it would be an ineffective effort. Therefore, it is essential to define variables included in the research to make it more scientific and objective. The study was restricted generally to gather primary data from district Naushahro Feroze Sindh. It was selected as the universe of the study because it represents a good case study for tomato production activities. The district is gifted naturally with fertile soil. Canals and tube wells are major source of irrigation. Wheat, sugarcane, cotton, and vegetables are the major crops grown in the area. Due to small land holding most of people are connected to mixed farming. Tomato growers has become an organized industry over the years and has got the attentions of farmers having small or large land holding due to high scope of income and rising prices of tomato fruit. Farmers now days, grow cash crops like tomato on their land to generate income. The sample was supposed to contain tomato farmers. A sample size of 60 respondents was selected through random sampling. As described above, the data was collected from district Naushahro Feroze, Villages and respondents from this area were randomly selected. Interview schedule was based on a well designed questionnaire. Comprehensive information was obtained face to face from the farmers involved in tomato farming and the tomato business and documented by the interviewer. Questionnaire was prepared in English language while the interview with respondents was done in local language i.e. Sindhi. Different features were covered in the questionnaire. Collected data had both quantitative and qualitative information. For data analysis Microsoft Office Excel software package and SPSS package were used.

Results

Socio-economic Profit and Farmers

The socio-economic features of the farming families like personal characteristics of the farmers and socio-economic attributes related to their families and farms generally considered important in receptivity of innovations and farm productivity. The mean age of the respondents was about 42 years with 56 percent primary level education. The farming experience of respondents was 16 years on an average. The average household size was about 7 persons per family. In rural setup, farm size and its composition have a significant bearing on the social and economic position of the farmers. On an average 76 percent of respondents having less than 10.5 acres and remaining 24 percent have more or equal to 10.5 acres.

Table No. 1 Social Character of Farming Community Social Characters	Findings
Average age	42 years
Primary Level Education	56 % of respondents
Farming Experience	16 years
Average Household Size	7 persons per family
Less than 10.5 acres of land	76 % of respondents
More than 10.5 acres of land	24% of respondents

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Fixed Cost

Fixed costs are expenses that are not dependent on the level of goods or services produced. They tend to be time-related, such as tax, rents being paid per month/year, and are often referred to as overhead costs. This is in contrast to variable costs, which are volume-related.

Per acre expenditure incurred on fixed costs in the study area

Particulars	Mean	S.D Error
Land Tax	700.00	0.11
Rent of Land	32487.00	367.53
Total	33187.00	367.64

This table is indicated that on an average per acre tomato growers spent a sum of Rs. 32487.00 in district Naushahro Feroze during the 2013 this included Rs. 700.00 for land tax, Rs. 33187.00 for rent of land.

Labour Inputs

A labour input refers to all outlays incurred to engage labour for production. Labour inputs were employed for all cultural operations during the period of lemon cultivation in study area. These operations are ploughing dry ploughing, leveling, sowing and inter-culturing, application of fertilizer harvesting, weeding and threshing.

Per acre expenditure incurred on labour inputs in the study area

Particulars	Mean	S.D Error
Dry Ploughing	2334.23	24.23
Clod crushing	1761.33	22.17
Lay Out	653.46	13.22
Making of bunds and channels	672.96	9.44
Soaking dose	613.58	7.54
Operating	857.62	23.33
Planting	887.27	14.40
Irrigation	966.15	10.35
Weeding	859.13	8.75
Digging pits and planting of suckers	1787.50	5.82
Application of FYM,	689.88	9.43
Watch and ward	665.53	3.39
Tank silt and Chemical fertilizers	1897.02	72.10
picked fruit/Cutting/ harvesting	5140.73	54.85
Total	19780.75	273.24

This table is depicted that the Rs 19780.75 on an average area of 4.19 acres during study year, which includes Rs. 2334.23 on dry ploughing, Clod crushing Rs. 653.46, Lay out Rs. 672.96, making of bunds and channels Rs. 672.96, soaking Rs. 613.58, operating charges Rs. 857.62, sowing Rs. 887.27, irrigation Rs. 859.13, weeding Rs. 559.13, application of FYM Rs. 689.88, Weedicides Rs. 559.13, tank silt and Chemical fertilizers Rs. 1897.02 and harvesting Rs. 5140.73 respectively in the study area.

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Capital Inputs

Capital input measures the services derived from the stock of physical assets and software used in production. The assets included are fixed business equipment, structures, inventories and land.

Per acre expenditure incurred on capital inputs in the study area

Particulars	Mean	S.D Error
F.Y.M	6871.42	62.19
Seed /plants	5239.83	65.76
Insecticide/Pesticides	7114.45	52.30
Urea	11233.83	32.80
Total	30457.65	211.34

This table is shows that each selected tomato grower of Naushahro Feroze on an average per acre of tomato spent a sum of Rs. 30457.65, that included Rs. 6871.42, Rs. 5239.83, Rs. 7114.45and Rs. 11233.83 on FYM, seed, insecticide/pesticide and urea respectively.

Marketing Costs

The total cost associated with delivering goods or services to customers. The marketing cost may include expenses associated with transferring title of goods to a customer, storing goods in warehouses pending delivery, promoting the goods or services.

Per acre expenditure incurred on marketing cost in the study area

Particulars	Mean	S.D Error
Loading	872.22	0.89
Transportation	2334.26	112.92
Unloading	985.32	0.89
Total	4191.73	114.70

This table is it is clear from result that each selected tomato grower in Naushahro Feroze area on average per acre spent a sum of Rs.4191.73, this included Rs. 872.22for loading, Rs. 2334.26 for transportation and Rs. 985.32 of unloading.

Total Cost of Production

TCP defined as sum of fixed cost plus variable costs make the total cost of production.

Per acre total cost of production in the study area

Particulars	Mean	S.D Error
Fixed Cost	33187.00	367.64
Labour Cost	19780.75	273.24
Marketing Cost	4191.73	114.70
Capital Inputs	30457.65	211.34
Total	87617.13	965.02

This table is the results showed in this table that the selected tomato grower in Naushahro Feroze area on average per acre spent a total cost of production of Rs. 87617.13during 2013

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this included Rs.33187.00, Rs19780.75, Rs.4191.73 and Rs.30457.65 on fixed cost, labour costs marketing costs respectively on capital inputs.

Physical Productivity

The yield when expressed in terms of physical weight is known as physical productivity. It is generally expressed in terms of unit weight of production obtained. In other words physical productivity of tomato farm is the same as the total yield obtained of other crop by farmers.

Per acre physical productivity in the study area

Particulars	Mean	S.D Error
Tomato fruit	186.00	1.86
Total	186.00	1.86

This table is it is clear form the result each tomato grower obtained per acre 186.00 in maunds on an average.

Revenue productivity

The value of farm production of gross profit it refers to money income accruing to the farmers from the sale of their production. It is calculated by multiplying the physical productivity (yield) obtained with the price, it is sold.

Per acre revenue productivity in the study area

Particulars	Mean	S.D Error
Tomato fruit	158750.00	116.51
Total	158750.00	116.51

This table is depicted that each selected tomato growers in Naushahro Feroze area on revenue per acre earned of Rs. 158750.00 that obtained by the grower of tomato.

Net - Farm Income

Net farm income is gross profits remains cash operating expenses and depreciation cost of machinery and equipments costs could be obtained by subtracting the gross revenue from cash operating expenses. Net farm income Averages output or gross income after subtracting all farm expenses. Net income is calculated to judge the efficiency of farm business as a whole.

Per acre net income in the study area

Particulars	Mean	S.D Error
Gross Income (Rs) A	158750.00	116.51
Total Expenditure (Rs) B	87617.13	965.02
Net Income (Rs) A-B=C	71133.00	1081.53

This table is the tomato growers on an average per acre earned during study, Rs. 71133.00 on net income, Rs. 158750.00 on gross income and Rs. 87617.13on total expenditure in the study area.

Input – Output ratio

The input-output ratio is calculated by dividing total income with the total cost of production.

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Per acre input-output ratio in the study area

Area sown	Gross Income(Rs.)	Total Expenditure(Rs.)	Input-output ratio
Acre	(A)	(B)	A/B=C
1	158759.00	87617.13	1:1.81

This table is showed that the selected lemon growers on an average per acre gross income Rs. 158750.00and total expenditure is Rs. 87617.13in Naushahro Feroze area therefore they availed input output ratio of 1:2.46 from tomato growing in the study area,

Cost Benefit ratio

The cost benefit ratio refers to net returns as compared to the cost of production. It is calculated by dividing net returns with cost of production.

Per acre cost benefit ratio in the study area

Area sown	Net income(Rs.)	Total Expenditure(Rs.)	Input-output ratio
Acre	(A)	(B)	A/B=C
1	171133.0	87617.13	1:0.81

This table is showed that the selected tomato growers on an net income per acre earned Rs.128382.87 and total expenditure Rs. 87617.13 in Naushahro Feroze area therefore they availed input output ratio of 1:2.46 from tomato growing in the study area,

CONCLUSION AND SUGGESTIONS

The research study on Economic Analysis of tomato Production District Naushahro Feroze Sindh can well be concluded for the findings during 2013 were the most efficient to cultivate the tomato at remunerative level. The agricultural infrastructure is the web of personal, economic, social and legal relationships that support the production of agricultural commodities. It includes, most visibly, agricultural input suppliers and output processors. However, it also includes the formal and informal business relationships between individual farms. Infrastructure provides access to input and output markets, access to agricultural services ranging from continuing education to consulting, as well as including institutional arrangements, such as the legal and monetary systems.

In Naushahro Feroze district is fertile in agricultural production. Thus, the district can have a potential to produce more wheat for meeting the staple food demand of growing population, there is also need for study the efficient tomato fruits production practices and issues in the production process for policy making.

It is important to note that economics analysis can only be estimated if the inefficiency effects are stochastic and has a particular distribution specification (Battese and Coelli, 1996). Technical efficiency is estimated using Limdep (Green, 2002). In the specification of the stochastic frontier production function, the model allow for specification of two equations on the right hand side. One equation specifies the main factors of production such as seed, fertilizer and labor and the other equation specifies the variables that are assumed to cause

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inefficiency such as access to credit and the gender of the household head. This is done in a one-stage process.

The present study uses the stochastic frontier production function approach to measure the economics implications of tomato production. In the analysis of farmer efficiency/ inefficiency, it is not the average of observed relationships between farmers' inputs and outputs that is of interest but the maximum possible output that is obtainable from a given combination of inputs. Thus, Frontier production function can be defined as the maximum feasible or potential output that can be produced by a firm with a given level of inputs and technology.

The new technology must result in greater production per unit of inputs than the existing technology provides in farmers environment. The given cost, prices ,tenure , and possible market discrimination, which exists for particular individuals of location, the technology must result in higher returns to family owned resources than existing technology and the inputs , credit and market facilities. If the growers have know how about the soil fertility and market conditions, the growers must return to higher profit by minimum expenses , through the efficiency taking by growers.

Based on the findings of the study the following policy implications were made. The information such as total holding, area under tomato, physical and revenue productivity obtained from tomato enterprises were enquired from the respondents. Data so collected was processed, tabulated, analyzed and interpreted in the previous chapters. Investigate the quantitative and qualitative aspect of various inputs as incurred by the producer to cultivate per unit (acre) of tomato in the area. The present study has been carried out the means to increase per hectare yield and consequently the income of farm; therefore the following suggestions are put forwarded as under;

1. Since the land is fixed, the government of Sindh should be encourage the use of fertilizer, and it can do this by providing incentives in order to provide fertilizers to households at an affordable price, so as to increase the level of production.

2. Growers may be educated about soil status market conditions to get better profit of tomato fruit.

3. The current scenario surrounding the low tomato production in Sindh requires the government to provide credit facilities that will enable households to access such credit at a reasonable cost.

4. The government should encourage private sector to invest in credit facilities like small–scale banks to offer credit to farmers at affordable rates. This should be through legislation to facilitate credit creation.

5. Good quality seed/plants and high yielding varieties may be introduced to get maximum benefit from tomato production. Marketing management may be made available by the government.

6. Government should improve its method of gathering and dissemination of information that is vital for households; this also requires government to increase its current level of extension services

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REFERENCES

Abay, A, 2007. Vegetable marketing chain analysis in the case of Fogera Wereda, in Amehara National regional state of Ethiopia. An MSc Thesis Presented to School of Graduate Studies of Haramaya University

Adenuga, S.O., G.O. Iremiren and S.O. Ojeniyi. 2011. Evapotranspiration, water use efficiency and yield of rainfed and irrigated tomato. Int. J. Agric. Biol. 13: 469– 476.

Adeoye I.B., O.M.O. Odeleye,S.O Babalola and S.O. Afolayan,2009. Economic analysis of tomato losses in ibadan metropolis, oyo state, nigeria. African journal of basic & applied sciences 1 (5-6): 87-92

Agbabiaje, J.O. J.G. Bodunde., 2012, socio-economic analysis of wet and dry season production of tomato (*lycopersicon esculentum* mill): implications for input use. Nigerian journal of horticultural science. Issn: 1118-2733

Agriculture statistics of Gilgit-Baltistan, 2009. Govt of Pakistan, Area, production of fruit, vegetables and cereals. Department of Agriculture Gilgit-Baltistan 2009. p.46.

Agriculture statistics of Pakistan, 2008-09. Govt of Pakistan, Area, production of fruit,vegetables and Condiments. Ministry of Food and Agriculture (Economic wing) 2008-2000. p. 84.

Agriculture statistics of Pakistan, 2008-09. Govt of Pakistan, Area, production of fruit,vegetables and Condiments. Ministry of Food and Agriculture (Economic wing) 2008-2000. p. 84.

Ahmed and Sabo Sa'id., 2011, comparative analysis of tomato production among farmers using informal and formal credit sources in kano state, nigeria. Thesis and dissertation, a thesis submitted to the school of postgraduate studies, ahmadu bello university.

Ahmed, H. M. and J. H. Mccoy. 2011. Food Grain Marketing in Northern Nigeria: Spatial and Temporal Performance. Journal of Development Studies, 14 (2): Pp.182-192.

Ayesha Tahir, Hassnain Shah, Muhammad Sharif, Waqar Akhtar and Nadeem Akmal., 2012, an overview of tomato economy of pakistan: comparative analysis. Pakistan j. Agric. Res. Vol. 25 no. 4,

Babalola D. A., Makinde,Y.O., Omonona, B.T., Oyekanmi. M.O. 2010. Determinants of post harvest losses in tomato production: a case study of Imeko – Afon local government area of Ogun state. Journal of Life and Physical Science. Acta SATECH 3 (2): 14 - 18.

Burhan, A., A. Ghafoor and H. Badar. 2005. Forecasting and Growth Trends of Production and Export of Kinnow from Pakistan. Journal of Agriculture Social Sciences.

Cary l. Rivard, Olha Sydorovych, Suzanne O'connell, Mary M. Peet and Frank J. Louws 2010, an economic analysis of two grafted tomato transplant production systems in the united states. *Horttechnology vol. 20 no. 4 794-803.*

Engindeniz. S 2007. Economic analysis of processing tomato growing: the case study of torbali, west turkey. Spanish journal of agricultural research 5(1), 7-15

Export Promotion Bureau. 2006. www.epb.org. Website of Export Promotion Bureau Accessed in the month of March 2006.

Government of Pakistan, 2013. Agricultural Statistics of Pakistan 2012-13. Ministry of Food Agriculture and Livestock (Economic Wing), Islamabad.

Haruna, U., Sani, M. H., Danwanka, *H. A.* and Adejo, e. 2012. Economic analysis of fresh tomato marketers in bauchi metropolis of bauchi state, nigeria. Nigerian journal of agriculture, food and environment. 8(3):1-8

Hugar, L. B. and K. C., Hiremath. 2001. Efficiency of Alternative Channels in the Marketing of Vegetables in Belgium City. Indian Journal of Agricultural Economics, 39 (3): Pp.192-200.

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-9107

Hussain, A. 2000. Vegetable Research in Pakistan. Shanmugasundaram, S.(ed) Vegetable Research and Development in South Asia: Proceedings of a work shop held at Islamabad, Pakistan, 24-29 September, 2000.

James Bret Holliman., 2006, an economic analysis of integrating hydroponic tomato production into an indoor recirculating Aquacultural production system. A thesis submitted to the graduate faculty of auburn university in partial fulfillment of the Requirements for the degree of master of science.

Keskin.g, F. F. Tatlidil and I. Dellal, 2010. An analysis of tomato production cost and labor force productivity in turkey, *bulgarian journal of agricultural science, 16 (no 6), 692-699.*

Khokar, K.M., S.I. Hussain, T. Mahmood, Hidayatullah and M.H. Lagari. 2002. Winter production of tomato under plastic tunnel. Asian J. Pl. Sci. 1:659-660.

Kluwana, M. K., Mishra, P. K. and Singh, O. A. R. 2011. Barriers to Information Sharing in Supply Chain of Manufacturing Industries. *International Journal of Manufacturing Systems,* 1(1):9-29.

Kulkarni, 2006, Genetic and breeding investigation in tomato (Lycopersicon esculentum Mill.). M.Sc (Agri.) Thesis , Uni. Agri. Sci. Dharwad (India).

Kumabari, 2002 , Effect of growth regulators and number of trusses on seed yield and quality in tomato (Lycopersicon esculentum Mill.) M.Sc (Agri.) Thesis Uni. Agric. Sci., Dharwad (India).

Lohano, H. D. and F. M. Mari. 2005. Spatial Price Linkages in Regional Onion Markets of Pakistan, Journal of Agriculture & Social Sciences, 01 (4).

Mari, F.M. Rajab, A. M. and Lohano, H.D. 2007. Measuring returns to scale for onion, tomato and chilies production in Sindh province of Pakistan. Int. J. Agri. Bio. 9(5) 788-790.

Massaoud, K. and Srinivass, M. V. G. 2012. Marketing Efficiency and Price Spread for Saffron in Iran. *Trends in Agricultural Economics,* 5(1):23-30.

MINFAL,2013. Ministry of Food, Agriculture and Livestock Pakistan Agricultural Research Council (PARC)

Muhammad, N. 2001. Factors affecting Area and Yield of Wheat Crop- A Case Study. Pakistan Journal of Agricultural Economics. Vol. 4, No. 2, PP 66-76.

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