

AWARENESS OF RESEARCHERS REGARDING WTO AND GLOBALIZATION OF AGRICULTURE

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ABSTRACT

The change in the global scenario in general and particularly in agriculture has brought with it lots of challenges and opportunities for our researchers. The shifts from subsistence agriculture to trade centered and from household production to cash crop production demand more suitable and efficient technologies. At the same time issues such as intellectual property rights and patenting are very relevant to researchers. It becomes very relevant to assess the existing awareness level of the researchers regarding WTO in agriculture and to analyze the steps required in this direction. With this objective in mind the present research was conducted with 90 agricultural scientists. An especially designed questionnaire was used to assess their awareness level about WTO in agriculture.

From the study it can be concluded that the level of awareness about WTO among researchers is not satisfactory in general. Therefore, it requires concentrated efforts on the part of the planners to provide more information in the media and incentives to the researchers to update their knowledge.

INTRODUCTION

Globalization is the process of integration of world's economies for free flow of trade and capital and movement of persons across border, facilitated by new technologies for instant communication of information. More than 1.5 trillion dollars is exchanged in the world's currency markets functioning 24 hours a day. Nearly 40 per cent of global output of goods and services is traded (Manaroma Yearbook, 2002). It means our economy is opened to invest in different fields of Indian industry / commerce (Sherlekar and Sherlekar, 2000). In the present research the phenomenon of globalization is being studied in the context of agriculture in India. The process of agricultural globalization cannot be studied without making reference to GATT and WTO.

The study attempted to evaluate the awareness level of agricultural scientists between different groups to access the scope of understanding on WTO issues in scientific community which is useful to formulate appropriate strategy to make them better informed in the future.

RESEARCH METHODOLOGY

The study was conducted in the research institutes and organizations belong to ICAR (Indian Council for Agricultural Research), and located in Pusa Campus, New Delhi. These organizations were IARI (Indian Agricultural Research Institute), IASRI (Indian Agricultural Statistical Research Institute, NCAP (National Center of Agricultural Economics and Policy Research, NCIPM (National Center of Integrated Pest Management and DOE (Directorate of Extension).

The sampling frame of the study consisted of 555 researchers (according to the report of IARI 2002 and other scientists and officers of IASRI, NCAP, and NCIPM including DOE) present at the time of the study. Among them, a total sample of 120 consisting of Principal Scientists (PS), Senior Scientists (SS) and Scientists (S), 30 from each category was selected. However, only 90 of them returned the questionnaires. The respondents were selected purposefully from different levels to give each category their due representation in this study. The respondents within each

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category were selected randomly. The sample size of the study was fixed approximately 15 % of the total scientists of IARI and other research organizations.

To evaluate the awareness of scientists about WTO, a questionnaire was designed having 24 main items related to the popular knowledge on WTO. The maximum score possible on this instrument was 56. Depending on the results of awareness, the awareness level arranged into 4 categories: 0 – 14 marks: “poor”; 15 – 28 marks: “medium”; 29 – 42 marks “good” and 43 – 56 marks: “very good”.

FINDING AND DISCUSSION

Profile of respondents

In order to understand the general profile of the respondents, the data on selected characteristics are presented in table 1.

The average age of the respondents at

Principle Scientist (PS) level was 55.3 years, followed by Senior Scientist (SS) level 42.6 years and Scientist (S) level 32.1 years. Overall average age of the researchers was 43.3 years (Table 1).

The majority of the respondents among all three categories separately and put together were Doctorate i.e. Ph.D degree holders, followed by MSc degree and Post Doctoral Qualification respectively (Table 1).

In general, family backgrounds of respondents were found to be 54.5 percent rural and 45.5 percent urban (Table 1).

Women scientists contributed only 22.3 percent of the total sample. The category wise split is given here in the table 1. Among the respondents, 33.3 per cent belonged to social science discipline and rest to natural science (66.7 %) (Table1).

Table 1: Profile of the respondents

Characteristics	Respondents			Total (N=90)	
	PS (N=30)	SS (N=30)	S (N=30)	Frequency	%
i) Age*	55.3	42.6	32.1	43.3	-
ii) Edu. qualification					
- Post-Doctorate	3	0	2	5	5.5
- Ph.D.	24	27	19	70	77.8
- M.Sc.	3	3	9	15	16.7
iii) Family background					
- Rural	17	12	20	49	54.5
- Urban	13	18	10	41	45.5
iv) Sex					
- Male	26	20	24	70	77.7
- Female	4	10	6	20	22.3
v) Specialist					
- Social science	11	8	11	30	33.3
- Natural science	19	22	19	60	66.7

Age*: Average age in years.

Researchers' Designation and awareness regarding WTO

To evaluate the awareness of scientists about WTO issues, a questionnaire was especially developed for this purpose. Exhaustive information about WTO issues related to agriculture was collected from various sources such as books, journals, internet, etc. This

information was converted into a questionnaire form. For the test of content validity the statements were shown to judges (experts in the field). On the basis of judges' consensus, the questionnaire was finalized. The final comprehensive Awareness Index contained 24 items with 56 maximum possible score.

Depending on the scores, the awareness level was arranged into 4 categories: 0 – 14 scores: “poor”; 15 – 28 scores: “medium”; 29 – 42 scores: “good” and 43 – 56 scores: “very good”. The study showed that no scientists in different designations had “very good” awareness level. Scientists in the designation S had signified the acumen in the globalization issues. Majority of both PS and SS had the “poor” awareness (73% and 76%, respectively). Whereas, S was 43.32 percent in “poor” category, 33.3 percent in “medium”

and 23.3 percent in “good” level of awareness and it was also significantly different as compared to PS and SS (Figure 1).

The result of correlation analysis ($R = 0.305^{**}$), showed that the designation and awareness level of scientists had significant positive correlation (at 0.01 % level).

The low awareness of PS may be attributed to their busy time schedule and less exposure to latest literatures.

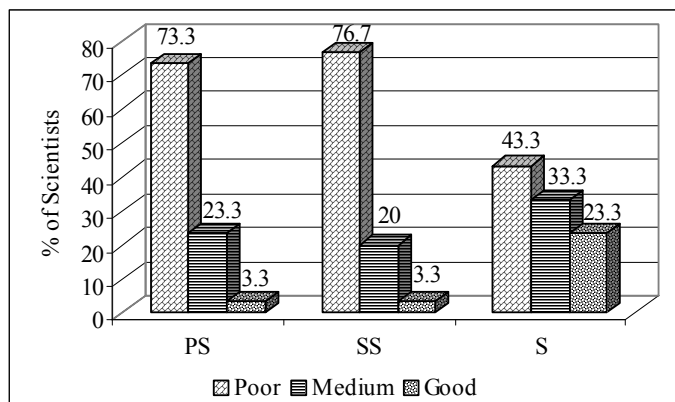


Figure 1: The association between scientists’ designation and awareness level -Pearson’s Chi-Square Value = 12.268*, -Pearson’s R value = - 0.305**
 -*= Significant at 0.05% level, -** = Significant at 0.01 % level

Age groups and Researchers awareness level regarding WTO

group categories i.e. young – up to 39 years of age, middle age group – 40 to 49 years and seniors – above 50 years.

The respondents were divided into three age

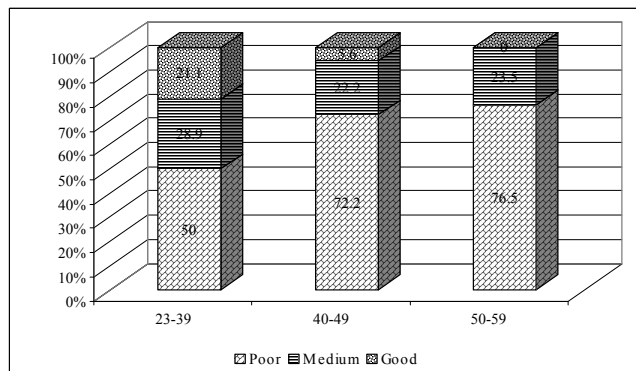


Figure 2: Association of awareness level on WTO and age groups of scientists

-Pearson’s Chi-Square Value = 10.864* -Pearson’s R value = - 0.319**
 -* = Significant at 5 per cent level -** = Significant at 1 per cent level

Figure 2 showed the relative similarity about awareness level between age groups of scientists and between scientists' designation and awareness level. Young scientists (young age group) got 50 percent "poor" level as compared to 72.2 percent and 76.5 percent in two other groups (middle and senior age group respectively). "Medium" level of awareness was observed relatively in all the 3 age groups (28.9, 22.2 and 23.5%, respectively). No scientists in the age group got "good" awareness level. Middle age group got only few cases of "good" awareness level

(5.6%), where as young age group got fairly high (21.1%) of this level. The value of χ^2 (Chi-square = 10.864*) signified the association as significant at 5 percent level.

The result of correlation analysis (R = -0.319**) was significant at 0.01percent level, but had negative correlation between age group and awareness status of the scientists (Fig. 2)

Awareness level regarding WTO and rural, urban background of Researchers

Table 2: The association of awareness level with family background of scientists

Family background	Level of awareness			Total (N=90)
	"poor" (0 – 14 scores)	"medium" (15 – 28 scores)	"good" (29 – 42 scores)	
Rural	32 (65.3)	10 (20.4)	7 (14.3)	49 (100)
Urban	26 (63.4)	13 (31.7)	2 (4.9)	41 (100)

-Pearson's Chi-Square Value = 3.103^{NS} -Pearson's R value = -0.056^{NS}
 -NS = Not significant

In this study, there were 49 scientists having rural background and 41 scientists who had urban background. There was no significant difference between the scientists having rural background and those having urban background in the level of awareness on the globalization issues. About 65.3 percent of the scientists having rural background got "poor" level, 20.4 percent "medium" and 14.3 percent "good" levels. It is similar to 63.4, 31.7 and 4.9 percent respectively in rural background scientist (Table 2). The result of correlation analysis (Pearson's R-value = -0.056^{NS}) was not significant. In other word, there was no correlation between family background and awareness level of scientists.

regarding WTO issues

The women scientists covered in this study were 20 (22.2% of the total respondents). The study indicated that similar level of awareness was observed in both woman scientists (7.1% "poor", 22.9% "medium and 10% "good" level of awareness) and man scientists (55, 35 & 10% respectively) (Table 3).

The result of correlation analysis (R = 0.075^{NS}) was not significant. It means that there was no correlation between sex and awareness level of scientists. This finding breaks the old stereotype image of women and emphasis the fact that men and women behave similarly on work place.

Gender and Researcher' awareness level

Table 3: The correlation between sex and awareness level on WTO of scientists

Sex	Level of awareness			Total (N=90) (%)
	"poor" (0 – 14 scores)	"medium" (15 – 28 scores)	"good" (29 – 42 scores)	
Man scientists	47 (67.1)	16 (22.9)	7 (10.0)	70 (100)
Woman scientists	11 (55.0)	7 (35.0)	2 (10.0)	20 (100)

-Figures in parentheses indicate percentage-Pearson's Chi-Square Value = 1.253^{NS}
 -Pearson's R value = -0.075^{NS} NS = Non significant at 5 per cent level

Awareness level on WTO issues among social and natural scientists

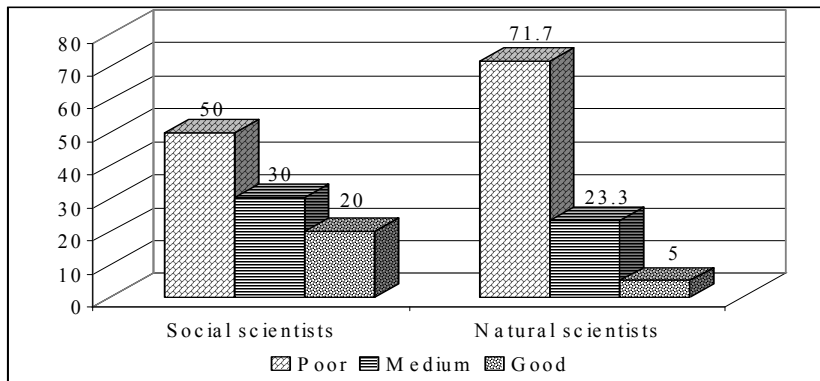


Figure 3: Awareness level among social and natural scientists on WTO issues

Pearson's Chi-Square Value = 6.305* -Pearson's R value = - 0.258**
 -* = Significant at 5 % level, -** = Significant at 1% level

Figure 3 shows the level of awareness between social and natural scientists. It was revealed that there was sharp difference about the awareness on WTO issues between scientists who were working in the social and natural sciences. Social scientists scored 50, 30 and 20 percent at “poor”, “medium” and “good” level, respectively, while natural scientists in different levels got 71.6, 23.3 and 5.0 percent, respectively. A large number of social scientists were in “poor” to “medium” level of awareness meaning clear cut neglect to the issues of globalization of agriculture, further, no one got the level of “very good” awareness on WTO issues. This could be due to the fact a big position of the awareness index included items on IPR issues that are of major concerns to the natural science researchers. Among natural science researchers, some were also considered as majority scored poor on awareness index.

The result of correlation analysis (Pearson's R-value = - 0.258**) was significant at 1 percent level. It means that there was the close correlation between specialization and awareness level of scientists (Fig. 3).

The study concludes that adequate attention on the increase awareness about WTO issues is required on the part of both social and natural scientists as it is going to affect in both carrying out research, transferring technologies to users under demand mode and safeguarding the interest of all the

stakeholders.

Awareness status and the seniority of the Researchers

The results of the correlation between awareness level and seniority of the scientists are shown in the Table 4, indicating average seniority in general, in teaching, in research and in extension of PS, SS and S. It also presents the relationship between the seniority of PS, SS and S with their awareness status. In case of PS, the average seniority in general, in teaching, in research and in extension was 29.43, 20.16, 25.13 and 9.93 years, respectively. However, the result of correlation analysis showed that there was no significant relationship between the experiences and their awareness level on WTO of the researchers in PS category (Table 4).

In case of SS, the average seniority in general, in teaching, in research and in extension was 16.16, 5.58, 12.60 and 5.25 years respectively. Experience in research of SS significantly correlated at 5 % level, whereas the experiences in other jobs did not correlated with their awareness level on WTO issues (Table 4).

In case of S, the average seniority in general, in teaching, in research and in extension was 5.36, 1.85, 4.36 and 1.05 years, respectively. Experiences in teaching and extension did not show any correlation with the awareness

level, whereas the experiences in general and in research had significant correlation with awareness level (R = -0.37*, - 0.49** at 5 % and 1 %, respectively) (Table 4).

In case of total scientists, the average years of experience in general, in teaching, in research

and in extension were 16.98, 9.20, 14.03 and 5.11 respectively. These experiences were found to correlate with their awareness level on WTO issues except the experience in extension that did not have significant correlation (Table 4).

Table 4: The correlation between awareness and the seniority of scientists

Variable	PS (N=30)		SS (N=30)		S (N=30)		Total (N = 90)	
	Mean (years)	R	Mean (years)	R	Mean (years)	R	Mean (years)	R
Experience in general	29.43	-0.07 ^{NS}	16.16	-0.22 ^{NS}	5.36	-0.37*	16.98	-0.40**
Experience in teaching	20.16	-0.23 ^{NS}	5.58	-0.14 ^{NS}	1.85	-0.30 ^{NS}	9.20	-0.33**
Experience in research	25.13	-0.02 ^{NS}	12.60	-0.40*	4.36	-0.49**	14.03	-0.39**
Experience in extension	9.93	-0.05 ^{NS}	5.25	-0.13 ^{NS}	1.06	-0.20 ^{NS}	5.41	-0.11 ^{NS}

* Significant at 5 percent level, ** Significant at 1 percent level.

The study concludes that experiences in general, teaching and extension in all categories of scientists did not correlated with their awareness level, whereas in case of SS and S, the experiences in research showed positive correlation. This means that those having experiences in research had direct relationship with WTO issues, while those having experiences in other cases had least relation with WTO issues. This is again a serious matter. Particularly, those, who are involved in teaching, need to be adequately sensitized on WTO matters as they are linked with the overall development of students. However, the study pinpoints that there is a serious need of sensitization about WTO issues for all the scientists to keep them abreast with the latest development in agriculture and take the advantages (Table 4).

Sources of information regarding WTO

and globalization of agriculture and awareness of researchers

The data analyzed on sources of information are presented in Table 5. Most of scientists responded that they received information related to WTO from three main sources viz. Newspapers, Magazines, and Journals (percentage of respondents were 93.3, 74.4, & 50 and mean ranking 1.64, 2.82 & 3.44 respectively). Most of them also indicated that seminar (symposium, conference), books and television (radio, films) had contributed as the second important source of information related to WTO (percentage of respondents were 65.5, 56.7, and 73.3; and mean ranking 3.62, 4.31 and 4.39, respectively). Where as, the role of informal discussions, training programs and others (internet) were not significant in getting related information (Table 5).

Table 5: Source of information regarding WTO & globalization of agriculture

Sources	Frequency	Percentage	Mean	Std. deviation	Sig.
Newspapers	84	93.3	1.64	1.14	*
Magazines	67	74.4	2.82	1.29	*
Journals	45	50.0	3.44	1.86	*
Seminars	59	65.5	3.62	1.88	NS
Books	51	56.7	4.31	2.02	NS
TV-radio	66	76.3	4.39	2.15	NS
Discussion	59	65.5	5.16	1.67	NS
Training	34	37.8	6.20	1.95	NS
Others	23	25.6	7.47	2.50	NS

- The lower ranks, the higher important sources, - * = Significant at 5 % level; NS = Not significant.

CONCLUSION

In this study, none of the scientists was ranked under the “very good” awareness level. There were no differences between women and men scientists, and between scientists having rural and urban backgrounds on the awareness level about WTO issues. The study also found that young scientists signified the acumen in the globalization issues. Most of scientists responded that they received information related to WTO from three main sources viz. Newspapers, Magazines, and Journals.

Low awareness of scientists in general may be due to their busy time schedule and official engagements in different disciplines. This

may also have the influence on their area of interest to specific issue of WTO than the general issues, which may be another reason for low awareness.

The level of awareness about WTO among researchers is not satisfactory in general. Then it requires concentrated efforts on the part of the planners to provide more information in the media and incentives to the researchers to update their knowledge for setting the right path of the globalization, and aiming to court the opportunities and to exploit the challenges from the globalization of agriculture.

REFERENCES

- Indian Agricultural Research Institute Report. 2002. pp. 186-197
- Mathew KM. 2002. Manaroma Yearbook,. Malayala Manorama Press, Kottayam 686
001. p.62.
- Sherlekar SA and Virendra Sharad Sherlekar. 2000. Global Maketing Management. pp. 1, 54, 473, 488, 524.

SUMMARY IN VIETNAMESE

Đánh giá sự quan tâm của các nhà nghiên cứu nông nghiệp về toàn cầu hoá nông nghiệp và WTO.

Những thay đổi viễn cảnh toàn cầu nói chung và đặc biệt trong nông nghiệp đã mang đến nhiều thách thức và triển vọng cho tất cả loài người trong đó có các nhà nghiên cứu khoa học nông nghiệp của chúng ta. Sự chuyển dịch từ nền nông nghiệp tự cung tự cấp sang nền nông nghiệp hàng hóa đòi hỏi nhiều về kiến thức và kỹ thuật thích hợp. Đồng thời trong giai đoạn hiện nay, các vấn đề như “quyền sở hữu trí tuệ” hay “sự cấp bằng sáng chế” trở nên rất liên quan đến các nhà nghiên cứu khoa học.

Hiện nay, chúng ta rất cần thiết đánh giá mức độ quan tâm và sự hiểu biết của các nhà nghiên cứu nông nghiệp về các vấn đề liên quan đến Tổ Chức Thương Mại Thế Giới (WTO - World Trade Organization) trong lĩnh vực nông nghiệp và phân tích các bước yêu cầu theo hướng này. Với mục đích đó, một nghiên cứu đã được tiến hành trên 90 nhà nghiên cứu khoa học nông nghiệp đang công tác ở các Viện Nghiên Cứu với nhiều ngành khác nhau trong nông nghiệp, trực thuộc ICAR (Hội Đồng Nghiên Cứu Nông Nghiệp Toàn Ấn Độ). Một bản câu hỏi đã được thiết kế đặc biệt để đánh giá mức độ nắm bắt của các nhà khoa học về WTO và toàn cầu hóa trong lĩnh vực nông nghiệp.

Từ kết quả nghiên cứu được, chúng tôi tạm kết luận rằng: mức độ quan tâm về WTO trong nông nghiệp của các nhà Nghiên cứu Khoa học Nông nghiệp rất ít, chưa đáp ứng với yêu cầu trong thời kỳ hiện nay. Vì thế, các nhà chính sách và kế hoạch phải tập trung nỗ lực để cung cấp nhiều thông tin hơn nữa và có biện pháp khuyến khích các nhà nghiên cứu nông nghiệp cập nhật kiến thức về toàn cầu hoá trong nông nghiệp và WTO.

Kết quả này cũng là một sự tham khảo cần thiết cho nước Việt Nam chúng ta trong điều kiện hội nhập vào nền kinh tế toàn cầu hiện nay và tương lai.