SUMMARY

(I) About the Study

1. People's perception towards Science and Technology (S&T) is a relatively unexplored area of study and the existing surveys carried out on the subject are only indicative but not representative in nature. To understand the people's perception about scientific and technological issues, the awareness about these issues, and how closely the masses follow such issues, Department of Science and Technology (DST), Delhi, commissioned the present study titled " A Case Study of People's Perception towards Science and Technology". It provides information on
   - the level of people's understanding of scientific and technological contributions and issues related to their day to day life; and
   - the level of people's perception of S&T's contribution to the present standard of living and the former's assessment about the future relationship between science, technology and economic prosperity.
2. The literacy level varies from a minimum of 38.48 per cent for Bihar to the maximum of 89.81 per cent for Kerala. These two states have been selected for the study, as they represent the extreme cases of literacy levels and overall development. For the rural sample two districts, and within each district three villages were selected from both states. The urban sample comprises Delhi, Bangalore, Thiruvananthapuram and Patna.
3. In each of the selected village/urban block, individuals above fifteen years of age were listed through a specially designed proforma. The listing proforma sought individual's particulars such as age, education and occupation. After completing the listing operation, individuals were then classified into one of the strata, based on sex, age and educational qualification. A maximum of two individuals were selected from each effective stratum to ensure that each listed individual in the stratum had an equal probability of selection. A total of 532 individuals from rural areas and 1072 individuals in the urban areas constituted the ultimate sampling units.
4. The questionnaire based approach, containing open and closed questions, was used in the present survey to analyse the level of the perception of people in different areas of science.
5. The data for the survey were collected during September to December 1997-98.
6. In the following sections, a summary of the findings of the Chapters II - IV is given.

(II) Information Acquisition

1. **Source of Information :** The major source of information for **rural** people is the 'radio' (over 87 percent). The second important source of information in Bihar (rural) is the local leader/people (54 percent) followed by television (28 percent). A smaller proportion of people of Bihar (rural) have opted for the print media as important source of information than for people in Kerala (rural), for whom the second important source of information is the newspaper followed by television and magazines. In general, **urban** masses use all types of channels of information but television and newspapers are the two most important sources of information in urban areas like Delhi and Bangalore. Local people/leaders are the least preferred choice as a source of information in urban areas, with the exception of Patna.

2. **Utilisation pattern of information sources** : The majority of rural people who have less access to TV and newspaper, prefer to listen to the radio regularly or occasionally. However, urban people spend more time to watch TV programmes and to read newspapers. For instance, in Bihar (rural) a substantial proportion of respondents have reported that they neither watch TV (40 percent) nor read newspapers (47 percent). However, these proportions for a city like Delhi are only 2 percent and 17 percent.

3. **Level of Confidence in the Channel of information** : The majority of respondents expressed that television and radio are two most important authentic sources for information. In general, better educated respondents are reported greater reliance on print materials (newspapers and magazines) while less educated individuals relied more often on audiovisuals. Among various information sources, the local leader/people as an information source is the least reliable across the sample places.

4. **Preference for Reading Media**

4.1 Forty two percent of population do not read any types of books/magazines in Bihar (rural) followed by Patna (28.4 percent). However, this proportion is very small in other sample places particularly in urban areas. In rural areas (Bihar & Kerala), majority of people prefer to read religious books/magazines followed by novels/stories and books related to films. But this proportion for Kerala (rural) is much higher than Bihar (rural).

4.2 In urban areas, there is no definite type of preference for reading. For example, in Delhi and Bangalore, the majority (30-48 percent) prefer to read all types of print media. However, in Thiruvananthapuram, people prefer to read novels/stories (78.3 percent) and books related to films (76.7 percent) rather than scientific (53.9 percent)and religious books (37.2 percent).

4.3 Reading of scientific magazines/books are the least preferred choice of respondents in rural areas and Patna.

4.4 Women in rural areas prefer to read books/magazines related to religion and films than their counterpart in urban areas. It is expected that rural people are more religious than urban people and have great faith in religion. This is reflected from this study that even rural people with higher education prefer to read religious books in comparison to other books. However, urban people with higher education, by and large, give equal importance to all types of books as far as preference for reading is concerned.

5. **Preference of Information** : News is the most preferred information in all the sample places except Bihar (rural) and Patna where people ranked it third. However, information related to films is placed at second or third place with respect to the preference of the people. S&T occupies fifth place, the least preferred subject, except for the city of Bangalore (where it is ranked second). People living in urban areas show greater preference for all subjects than do people in rural areas and this may be due to greater cultural activity in the city which generates its own interest.

(III) Public Understanding of Science

1. Using a set of twelve items to gauge public understanding, Thiruvananthapuram ranked first followed by Bangalore, Delhi and Kerala (rural) while Bihar (rural) ranked sixth. Across the twelve items, Thiruvananthapuram, Bangalore and Delhi ranked either first, second or third except for two concepts, i.e. smoking causes serious health problems and hybrid varieties yield more than do local varieties. Patna and Kerala (rural) ranked fourth or fifth irrespective of items posed to respondents. Among sample places, it is observed that the level of understanding of people of Bihar (rural) is significantly lower than other sample places.

2. Respondents with a higher the level of education have better level of understanding of concepts than respondents with a low level of education. Similarly, the level of understanding of students and service men is significantly higher than people who opt for occupations like, agriculture, wage earning, trading, etc.

(IV) Level of Awareness

1.1 **Level of Awareness in the Area of Agriculture** : The proportion of the 'least' informed in agriculture is approximately 51 percent for Bihar (rural). In other words a majority of the population of Bihar(rural) is aware of answer to less than five of twelve of the questions which were asked to each respondent. This proportion is much higher in urban areas particularly for Delhi. For Kerala (rural & urban) the share of population who answered over

eight technologies/process correctly, is the highest.

1.2 About 48 percent of people in Kerala (rural) are aware of the use of these technologies followed by 32 percent in Bihar (rural). The level of use of these technologies for Thiruvananthapuram and Patna is the same (10-11 percent) respectively. However, this proportion is the least for Delhi(3 percent).

1.3 The share of population who answered two major benefits of various technologies correctly is on the contrary, significantly higher than rural areas. It is also important to note that approximately 34 percent of the population of Bihar (rural) are using technologies/process without knowing their importance (benefits).

2. **Level of Awareness in the Household Sector** : Majority of people (over 50 percent) fall under the category of "most" informed with respect to the awareness of household technologies across sample places. It varies from between 96 percent for Thiruvananthapuram to 53 percent for Bihar (rural). The proportion of people using these technologies ranges from 40 percent for Bihar (rural) to 77 percent for Delhi. Also, the majority of people are aware about two major benefits of technologies/processes related to household sector.

3. **Level of Awareness in the Field of Communication**: Results reveal that the majority of people (over 50 percent) of urban areas like Delhi, Bangalore and Thiruvananthapuram fall under the category of the 'most' informed in the field of communication. However, this proportion for Patna and Bihar (rural) is 36 percent and 11 percent, respectively. It is also observed that the majority of people of Delhi (67 percent) and Bangalore (50 percent) were using these technologies in day-to-day routine, but this proportion is the least for rural Bihar (9 percent).

4. **Level of Awareness in the Field of Health & Hygiene** : Over 60 percent of people of urban areas (except Patna) are aware about five to six technologies/processes related to health and hygiene. This proportion for Patna is 24 percent which is less than even rural Kerala (47 percent). However, people of Bihar (rural) falls under the category of the "Least" informed in health and hygiene. In comparison to other subject areas, health and hygiene has a higher percentage of people unaware about major benefits and the proportion varies from 4 percent for Delhi to 24 percent for Bihar (rural).

(V) The Impact of Science & Technology on the Quality of Life

1. A positive attribution to S&T of a high standard of living, improved public health, and an increased enjoyment of life of individuals across sample places. Even in the case of improved working conditions and national/world peace, a plurality of respondents thought that the contribution of S&T has been more positive than negative.
2. There are significant differences between the assessment of men and women on S&T's impact on the quality of life. In general, men show a more positive response to S&T than do women. From this finding, it may be concluded that the benefits of S&T outweigh its harmful consequences; better educated respondents are more likely to assess the balance as strongly favouring beneficial over harmful results.

(VI) People's Perception of and Reaction to Modern Technology

1. A large proportion (above 50 percent) of people have a negative perception towards modern technology that varies from 53 percent for Bangalore to 93 percent for Bihar (rural). The level of perception for Thiruvananthapuram (64 percent) and Delhi (65 percent) is approximately same. As far as Kerala (rural) is concerned, the negative perception is much lower than for Bihar (rural) for all the issues considered.
2. As in case of negative perception, a large proportion of people react negatively towards modern technology. It varies from 50 percent for Bangalore to 92 percent for Bihar (rural). The three main issues related to modern technology that were reacted negatively by majority of people across the sample places are
   - Threat of jobs (63 percent for Bangalore to 97 percent for Bihar-rural)
   - Reduces people's creativity (53.8 percent for Bangalore to 94 percent for Bihar-rural).
   - Alienates people from work (47.6 for Bangalore to 93 percent for rural-Bihar).

   Among different sample places, the negative reaction for Bihar (rural) is much higher than other sample places for different issues.
3. There are indications of a relationship between the perception and reaction of people to modern technology. The difference between mean scores as well as standard deviations on the negative perception (X_1) and the negative reaction (Y_1) are not significant for respective sample places. In fact, the standard deviations for both are approximately equal across sample places. Again, the two deviations move in the same direction which suggests that on the whole, they have a positive relationship. Also, the regression coefficients are positive and range from 0.83 for Bihar (rural) to 0.94 for Delhi. This shows a positive relationship

between the perception of and reaction to people to modern technology by respondents. The measure of the level of association, indicates the range of the standard error of estimate's value as 1.6 to 2.7, which however, indicate that this relationship is not strictly a perfect linear function (a zero value expresses a perfect linear relationship).

4. The negative behaviour towards modern technology arises from the perceived enslavement of the people who loose their creativity and initiative and become a mere tenderer of technologies without sufficient room to improve respective skills. Of course, all these impinge upon people's motivation and the effectiveness and efficiency in production. Thus, the negative behaviour towards modern technology needs to be checked through behaviour modification techniques.

5. Despite the fact that this study seems to be the first of its kind in India, the findings appear to be sufficiently rich to permit NCAER to offer some recommendations for policy-makers. The introduction of new technologies must as a condition necessitate the introduction of some form of feed back mechanism to monitor the effectiveness of communication between researchers/policy-makers and common users. The message to be communicated by researchers/policy-makers must be in a form that easily facilitates understanding for people and if any form of discrepancy exists this may lead to negative consequences.