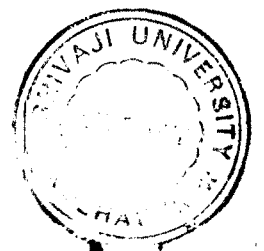


CHAPTER - II
REVIEW OF LITERATURE
AND
METHODOLOGY



CHAPTER II

REVIEW OF LITERATURE AND METHODOLOGY

2.0 INTRODUCTION:

This chapter is designed to present a brief review of the studies on NGOs and Watershed Development and to elaborate methodological aspects of the present study, Let us first look at the salient features of the research on NGOs, Watershed Development Projects and their impact.

2.1 NGOs, WATERSHED DEVELOPMENT PROJECTS AND THEIR IMPACT: AN OVERVIEW OF RESEARCH LITERATURE

Some scholars have studied the role of NGOs and impact of watershed development programmes on the beneficiaries. Some such studies have been reviewed below.

In his article Kishore Saint says, “as a planned and self-managed ecological protection and regeneration effort primarily for the benefit of the community living there, micro watershed management encompasses the whole range of land and water ownership, use, production and distribution aspects related to the climate, topography, hydrology and soils of a specific micro-watershed.

Perhaps the first step in undertaking micro-watershed planning is the creation of an awareness in the community-a village or a group of

villages – of the watershed as their habitat and as a basis of their livelihood; often this recognition is implicitly there in local names for the area, e.g., our 'Patti or our 'Ghati' or even 'Pani-dhal' which mean, literally, our watershed" [Kishore, Saint, 1989:21]. Such an awareness can be created by the NGOs.

Hanumantha Rao has carried out a study of an NGO called 'DILASA' and the impact of watershed development programmes undertaken by it. Most of these projects were launched in 1996. After the completion of 80 to 95 per cent of works under the programme, a detailed survey of 15 farmers in each watershed was conducted by following the 'Before' and 'After' method. This study came out with following findings: "In most cases, the crop yields after the implementation of the programme were higher by over 60 per cent, the cropping intensity increased by 40 per cent to 60 per cent. As a result, the total output from crops registered a big increase, ranging from 150 per cent to 250 per cent in most cases. As much as two-thirds of this increase in output came from rabi crops, indicating improved stability in output and increase in employment. Dairying and other economic activities have also shown a marked improvement. Migration of labour has been reduced, enrolment of children in schools, especially girls, has increased and there is increased participation of women in decision-making. However, the study has highlighted the need for the

development of roads for deriving full benefit from the programme” [Hanumantha Rao, 2000:3944].

Anil Shah has carried out a study of the impact of watershed development in May-June 2000- a year of very severe drought – in eight droughts – affected districts of Gujarat. The study investigates the position regarding access of drinking water, area under crops in Kharif and rabi seasons, yields of main crops, fodder and animal husbandry, milk yield, local employment and migration and food security. The findings are revealing in that, “they show the incidence of drought to be much less severe in watershed villages when compared to the adjoining non-watershed or ‘control’ villages. The study comes to the conclusion that the overall impact is not only positive but also impressive... to a large extent the participatory watershed scheme launched in 1995-96 by ministry of rural development has been found to mitigate the impact of drought. However, the study points out that, the activities and enterprises that specially affect women, such as drinking water and dairying tended to receive less attention. Further, the study also observes that the expenditure on drought relief being incurred now can be spent more productively by allocating it for watershed development with very little extra expenditure” [Cited from Hanumantha Rao, 2000:3944].

Amita Shah has noted following impacts of watershed development projects. “The project has led to significant increase in the

yield mainly due to increased water-table and availability of irrigation. The yield gain however varied across crops and region. For instance, increase in yield is more consistent among irrigated as compared to unirrigated crops. This observation is largely in conformity with the findings from several other projects in Gujarat and elsewhere in India” [Amita Shah, 2000:3161].

Amita Shah and Gani Memon, in a quick review of watershed development projects (WDPs) being implemented since 1995-96 in Gujarat, examine their initial impact at the household level based on a primary survey covering 120 households in four micro watersheds selected from Rajkot, Surendranagar, Amreli and Bharuch. They have noted that, even though the project had barely completed 4 years of its implementation, irrigated area almost doubled since the project intervention. “Since increased irrigation has been used mostly for growing cotton during kharif which gets extended up to rabi season, there is in effect, an increase in cropping intensity. Increased irrigation has led to a substantial rise in average yield of productivity per hectare from all crops combined. Thus, the total net returns from all crops increased by 63 per cent. As many as 87 per cent of the households reported that the project created direct benefit in terms of drinking water facility, such proportion being nearly 100 per cent in Surendranagar and Bharuch. The majority of landless households (71 per cent) reported

increase in the availability of employment mainly on the project activities, even though it has not yet led to reduction in migration” [Cited from Hanumantha Rao, 2000:3945].

The State Water Conservation Mission has evaluated the watershed development projects in Andhra Pradesh. The findings reveal that, “the area where watershed development work has been done for five years accounts for about 10 per cent of the problem area designed for Drought Prone Areas Programme. According to an evaluation by the State Water Conservation Mission, between October-November 1998 and October-November 1999, out of nearly 2000 watersheds evaluated, in as many as 90 per cent of the watersheds, water levels are increased to varying levels despite a decline in rainfall by 28 per cent; nearly 1.7 lakh hectares of additional area has been brought under irrigation; and, as a result, migration of labour declined from 10 per cent to 40 per cent in different watersheds. It is pointed out further that, none of the villages experiencing acute drinking water shortage during summer this year belonged to any of the watersheds under the programme” [Cited from Hanumantha Rao, 2000:3945].

Deshpande V.V. has carried out a study of an NGO called ‘Marathwada Sheti Sahayak Mandal’ (MSSM) Aurangabad, Maharashtra and the impact of watershed development programmes undertaken by it. The author observes that, “many changes have occurred in Adgaon

after the project implementation. Some changes that have occurred in the village can be pointed out as under. Irrigation potential has increased almost three folds. Earlier 25% of the cultivable land had irrigation facility, which has now expanded to 75% of the land. Income of the village has increased almost ten folds in good years. Landownership pattern has also changed. Now, due to intensive cultivation, there is a rise in income as well as demand of labour. Often it becomes very difficult to get labour. The wage rates are negotiated. Quite often the farmer has to visit homes of the labourers to ask for labour. As one can lead a good life even with lesser land, some farmers have a tendency to sell their land and small farmers who are landowners as well as labourers on others fields have stopped going to other fields for work. Some labourers, because of good wages and earnings, are in a position to purchase small pieces of land.

Consumption pattern has improved. One of the respondents stated that the number of guests coming to him has gone up. Earlier, he was not in a position to treat them well, whereas now he is in a position to do so. Pucca and good house construction has gone up. Better food is available and is within the reach of villagers. Consumption of milk and nutritious food has increased. Number of girls going to school has increased to a great extent. More amounts is available and is spent on health care of both males and females. Villagers have become

achievement – oriented and there is healthy competition for prosperity through hard work. Status indicators are fast changing. Prosperity through hard work is gaining importance for getting status. Villagers have gained confidence in their ability. They feel that they can achieve development through their resources and efforts. They have become more positive in their attitude.

Sociologically speaking, some of these are latent functions. There are certain latent dysfunctions also as pointed out by respondents. People have become more individualistic or automistic. Community or group actions are on decrease. People are becoming more money-oriented and material comfort –oriented. Dowry amount is on increase. Some of the respondents are afraid that if this tendency is not checked in time, the question will arise as to what use is such development. They feel that they should be able to achieve a proper blending of traditional values of community and feeling of collectivity along with adaptive capacity of using modern technology.

So far as the role of voluntary organisation in social change is concerned, the following are some conclusions: Voluntary agency can play a more positive role in social change provided group under change is ready and eager for the change, as we found in the case of Adgoan. At Dev Pimpalgaon people were not eager and they did not participate in the project as expected. Where people have participative attitude and

willingness for hard work, the role of voluntary agency becomes more useful. Though voluntary agency may not be able to bring total structural change, it can definitely help the community in achieving improvement in one or many aspects of the quality of the life of people” [Deshpande, 2004:153].

Amita Shah has carried out a study of an NGO called ‘Kribhco Indo-British Rainfed Farming Project (KRIBP)’ and the impact of watershed development programmes undertaken by it. As she notes, “KRIBP was launched in 1991-92 with primary aim of improving the long-term livelihoods of poor farmers in a drought prone region in three districts, each in Gujarat, Rajasthan and Madhya Pradesh. The immediate objectives of the project was to promote a replicable, participatory and poverty focused approach to farming systems development. Soil-water conservation programme is considered to be an important initiative of the project. By 1997 the project had completed five years of implementation. According to an internal assessment, the project has made following achievements: a) Increase in cropped area by 11 per cent. b) Soil erosion of treated land has reduced to acceptable limits. c) Water table has increased by about 1 metre thereby making supplementary irrigation available to many farmers. d) Impact in terms of increased yield, except on small patches of paddy, is not reported on a large scale. Even if the potential yield impact (expected to be in the

range of 20-30 per cent) is realized it may still not ensure food security to a large number of households. e) Overall, the observations suggest that the SWC- Programme is only a beginning towards a more comprehensive strategy to enhance crop productivity and an overall development of farming system including pasture development and animal husbandry which are by and large missing in the programme [Amita Shah, 2000:3162].

Lakshmikanthamma S has carried out a study of four watershed development projects in the country for in-depth study and analysis. The unit of analysis is watershed. The selected cases are A) Mittemari Watershed Development Programme, B) Watershed Development by MYRADA in Karnataka C) the Ralegon Sidhi Project of Maharashtra, and D) Sukhomajri Project in Ambala district, Haryana. The major findings regarding these projects are noted below:

A) The Mittemari Watershed Project:

Mittemari watershed forms the sub-watershed of the district watershed Chitravathi of Kolar district and it was launched in 1984 by Government of Karnataka. The line department like agriculture, horticulture and forestry in collaboration with scientists of University of Agricultural sciences undertook the implementations of watershed development activities in Mittemari watershed project area. The climate of this watershed is semi-arid, sub-tropical with mean annual rainfall of

724.15 mm. The total geographical area of the watershed is 1247 hectares of which 750 hectares of dry land had identified for Soil and Water Conservation development. This consists of 583 hectare of arable and 167 hectares of non-arable land. In this project an amount of about Rs. 21.07 lakh has been invested, out of this investment 42% is accounted for non-arable land development and 37% by arable land development, overall investment per hectare is about Rs. 2809. The various soil and water conservation structures like contour bunds, strengthening of existing field bunds, gully checks, vegetative checks, drop structures, farm ponds, pickup weirs and nala bunds have been constructed. In Mittemari 167 hectares of non-arable lands have been covered by forestry plantation and out of this 60 hectare of tank bed planted with acacia nilotica.

The findings reveal that, the new production opportunities
resulting from watershed development programme have led to a greater crop diversification and commercialization of agriculture. In Mittemari, cropping intensity as measured through the multiple cropping indexes was higher in WPA. Watershed development activities in Mittemari project area have led to an improvement in the yields of major crops. The per hectare value productivity of total crops in Mittemari watershed project area is higher for all the strata farms, for taking all crops together, productivity in value terms was Rs. 4728 per hectare. The cost and



return analysis of crop cultivation revealed that WDP has led to higher per hectare investment for aggregate crops cultivation and returns or profits over all costs were also higher, i.e., average household income and per capita income were also higher in WPA for all size groups of holdings. Thus, the WDP in Mittermari has had a positive impact on dry land agriculture; it led to an improvement in crop yields, income and employment. It has improved the returns; even the small farmers have also shared the gains of this growth. However, this programme achieved only partial success, i.e., the full objectives of watershed development programme are not realised.

The main constraints in this programme were: a) Adoption of dry farming technology like use of inputs as well as adoption of improved cultivation practices are only partial. b) As regards the programmes impact on improving the availability of fuel, fodder and small timber and reducing the pressure on forest, not much success is achieved. c) Maintenance of SWC structures created under WDP is not satisfactory and poses a threat to the very sustainability of the watershed development. d) The major constrain is that, there was lack of participation of people in various stages of the WDP such as planning, implementation and maintenance stage. The Government of Karnataka has failed to involve the people in WDP and as a result, full benefits of WDPs have not realised [S. Lakshmikanthamma, 1997:237].

B) Participatory and Integrated Development of Watershed (PIDOW) Project:

As cited above, inadequate people's participation stand in the way of realisation of full benefits of WDP. To overcome this defect, the Government of Karnataka in collaboration with MYRADA (Mysore Resettlement and Development Agency) a NGO, and with financial assistance from Swiss Development Co-operation has launched a watershed project known as PIDOW in Gulbarga district. MYRADA has taken a lead role in the management and development of watersheds. Its main objective is to include the people as a partner in WDP and emphasized the formation of people's associations. Through these associations, people can collectively utilize, regenerate and manage the natural resources of the watershed in an effective and sustainable manner. It also aims at improving the well being of the small, marginal and landless people in the watersheds.

The original project area demarcated by the PIDOW was spread over to 526 hectares during 1986. For effective participation three mini watersheds with 243 to 324 hectares of land area were selected. These are Wadigera, Bhagwan Tanda and Bondankar. MYRADA's initiative in watershed development started with the detailed discussions with the farmers and it also understood the traditional practices followed by them in conserving natural resources. Then, the project organizer educated,

motivated and trained the village community about watershed development programme for effective use and conservation of natural resources and their participation in the programme. The project staff organized the people into small homogeneous groups or Sanghas. Each Sangh framed its rules and regulations. Sanghs have mobilised the savings of their members and also raised funds through contribution. These Sanghas played vital role in mini-watershed development. People's participation in watershed development started from planning, it decided the location of soil and water conservation structures, water harvesting structures, their designs, materials to be used, decision regarding the execution of the Soil and Water Conservation work in the watershed etc.

PIDOW's self-evaluation study of Wadigera mini-watershed during 1991 revealed that, people whole-heartedly participated in planning, implementation and maintenance. In this mini-watershed, through Sanghas, people maintained individual assets and structures constructed on public lands. People contributed both cash and labour for construction of community hall, boulder wall around the block plantation, road forming, avenue plantation, etc. Thus, in PIDOW, village level Sanghas played a crucial role in regenerating the degraded private and public lands of the watershed areas, mobilised the savings of

the farmers and thereby improved the productivity of land, increased income and employment in the selected watersheds.

The PIDOW project experience indicates that NGOs may be able to organise people and could elicit their participation in all stages of watershed development than government agency. Through Sanghas NGO motivated and trained the people to design, construct, repair and maintain the assets and structures established on both private as well as common property lands [Cited from Lakshmikanthamma, S. 1997:238].

C) Ralegaon Siddhi Project:

Ralegaon Siddhi village situated in Parner Taluka of Ahmednagar district in Maharashtra was an acute drought prone area during 1978. Now, it has been transformed into economically and socially self-sustained village through the watershed development under the able leadership of Sri. Anna Hazare, who organised the village youths and worked for their well being. This village comes under the agro-climatically scarcity zone. The annual average precipitation varies between 500-700 mm. The total area of the watershed is 977.41 hectares. Out of the total area, 543 hectares (56%) is cultivated area. Only 10 per cent of the total cultivated area has irrigation (56.43 hectares). The watershed development activities were initiated during 1980s at the investment of Rs. 141.30 lakhs (at 1992 prices). About 160 hectares of land has been brought under contour and field bunds. About

32 nala bunds have been constructed. Gully checks have been put to the extent of 180 hectares. Nearly 136 hectares of land is brought under social forestry, 47 hectares of area has been brought under fodder. Local live stocks were replaced by the high yielding varieties and open grazing has been completely stopped and have switched over to the stall-feeding. As a result, abundant supply of fodder is ensured. All these activities prevented soil erosion, besides it provided the fuel, fodder, small timber, fruits, etc., which reduced the pressure on natural vegetation.

This project has a significant positive impact on the crop yields and production, live stock yield, fodder production, employment, income, prevented the out-migration for employment, etc. This village has been able to attain self-sufficiency in foodgrain production, they are able to send their agricultural produce such as onions and vegetables to Gulf countries. The per capita income of the villagers was Rs. 323 during 1978; the same has increased up to Rs. 2781 during 1992. The Ralegoan Siddhi village has prospered through watershed development. Its prosperity may be attributed mainly to organised effort of the villagers under the guidance of Sri. Anna Hazare who organised the villagers into an association called "Tarun Mandal." For equitable distribution of water, 'Pani Puravatha Mandals' were established. The villagers have participated whole – heartedly in the watershed

development project and have contributed shramdana, i.e., labour worth Rs. 11 lakhs. The Ralegaon Siddhi villagers are able to realise the full benefits of the watershed development programme. This experience shows that voluntary efforts with an able leadership like Sri. Anna Hazare could able to achieve a lot through the resources available with them. This model could be replicated in other villages of India” [Cited from Lakshmikanthamma, S.1997: 240].

D) Sukhamajiri Project:

“Sukhamajiri is the first model micro-watershed developed in the country. It is considered as one of the best-developed watershed in the country with effective participation of people. Sukhamajiri is a small village situated in the foothills of the Sivalika in Ambala district of Haryana. Prior to watershed development, the situation in this village was dismal. Due to the absence of any irrigation facilities, agricultural productivity was very low and people were dependent heavily on animal for their livelihood. Uncontrolled grazing along with open access for fuel woodcutting denuded the hills from their protective vegetative cover, which resulted in high levels of soil erosion in the region and sediment deposit in the Sukho Lake. This process of environmental degradation led to a vicious circle of poverty. The Sukhamajiri watershed development project was launched in 1978. During 1980, a village society was formed with all the households of the village as

members including the representatives from Central Soil and Water Conservation research and training institute and forest department.

The development of watershed in this village started with the construction of a dam. Realising the benefits of this, bigger tanks were constructed. The total area of 4085 hectares was treated at a cost of Rs. 78.32 lakhs that is on an average cost of Rs. 1917 per hectare. Out of the total cost, 61 per cent was contributed by the people, in the form of skilled and unskilled labour. Access to water for irrigation led to formation of an organization known as "Water Users Society" which distributed the right to irrigation equally among members, however this was accorded with the instruction to follow stall feeding. The members who could not use their share of water were permitted to sell their share to others. This society got the contract of fodder grass from the forest department. And it fixed the norms of fodder harvest. Accordingly, it allowed one member from each household to collect the fodder from the forest by paying the charge fixed by the society.

All these norms helped in the development and maintenance of the watershed. The impact of watershed development on economic well being of the people is reported to be positive. This watershed development resulted in a significant increase in crop and milk yields. Their employment and income also increased substantially. Additional benefits accrued include access to fuel wood, bhabhar grass (raw

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material for rope making which provided additional employment opportunities to poor), timber, fruits, etc. Environmentally, the soil erosion has been arrested significantly and monsoon flooding has been checked.

Thus, Sukhamajiri watershed development experience depicts that success of WDP mainly depends upon wholehearted participation of people in an organized way. However, it can be attained only with increased productivity of crops, milk yields due to provision of supplemental irrigation and assurance of equal share of water to every villager” [Cited from Lakshmikanthamma, S. 2000:241].

Thus, the studies reviewed above have indicated positive impact of watershed development programmes. The present study is undertaken on the similar lines in order to study the role of NGO in Watershed Development and to examine the impact of watershed development on the beneficiary farmers.

2.2 METHODOLOGY OF THE STUDY

The present sub-section of this chapter is devoted to explain the methodological aspects of the present study. Various aspects of the methodological procedure adopted to complete the present work, such as the research problem, objectives of the study, study area, sampling, sources of data, tools used for collection of data, period of data

collection, analysis, interpretation and presentation of data are explained below.

1) STATEMENT OF THE PROBLEM:

The aim of the present study is to understand the role of Yerala Projects Society, an NGO, in Watershed Development and to examine the impact of watershed development programme on the beneficiaries.

The seeds of the Yerala Projects Society were sown in 1972, the year when the operating area (Kamalapur Area) was facing severe drought. A team of volunteers from Sangli joined the villagers to form a group to take up drought relief work with the help of donor agency. This group made sincere efforts to help affected families. The relief work continued for 3 years. As the conditions improved, the relief operation was phased out. In this process the implementing group gained confidence that they together can take up constructive work to improve the condition of the poor and needy villagers in the operational area. After assessing own potential, the group decided to take up rural development work. Then the organization was formally registered in 1976. Yerala Projects Society is promoting Ecology, Housing, Agriculture, Animal Husbandry, Family Development, Promotional Activities, Training and various income generation activities. So far, three watershed development projects have been implemented by YPS on two different rivulets. Total 36 KT weirs have been constructed on

the two streams. This has brought about 1750 acres of land under all season cultivation. The present study aims to understand the role of Yerala Project Society in implementation of watershed development projects and impact of watershed development projects on the selected beneficiaries.

2) OBJECTIVES OF THE STUDY:

The following were set out as the objectives for the present study.

- 1) To understand 'Yerala Projects Society' in terms of its objectives, policies, programmes membership.
- 2) To assess the contribution of the Yerala Projects Society in implementation of watershed development projects.
- 3) To examine the impact of watershed development projects on selected beneficiaries.

3) THE STUDY AREA:

The rural area adjoining Kamalapur village in Khanapur Taluka of Sangli District (Maharashtra), where Yerala Projects Society has implemented watershed development projects constitutes the study area of the present study. More specifically, beneficiaries from villages such as Bhalavani, Panchshilnagar, Kalambi and Dhavaleshwar are selected for the present study. (The Figure 2.1 and 2.2 depict the map of Sangli district and Khanapur taluka respectively see in the Appendix - IV.)

4) SAMPLING:

As per the information collected from the Yerala Projects Society, 675 families have been benefited by the watershed development projects. These projects have benefited five villages namely, Bhalavani, Panchshilnagar, Kalambi, Dhavaleshwar and Shirgaon. Four, out of five, villages were selected by using purposive sampling technique: Bhalavani, Panchshilnagar, Kalambi and Dhavaleshwar. Out of 675 total beneficiaries, 402 beneficiaries belonged to four purposively selected sample villages. The village wise breakups of the beneficiaries reveal that there were 147 beneficiaries in Bhalavani village, 155 beneficiaries in Kalambi village and 50 each from Panchshilnagar and Dhavaleshwar.

Keeping in view the resources in terms of time and money available with the researcher, it was decided to purposively select nearly 25 per cent beneficiaries from all the four selected villages. Accordingly the researcher has actually collected data from 100 respondents, by adopting purposive sampling technique. The researcher could collect data from 30 respondents from Bhalavani, 36 from Kalambi village, 16 from Panchshilnagar and 18 from Dhavaleshwar village. Thus, the data were actually collected from a total of 100 respondents (approximately 25 per cent of 402 total beneficiaries).

5) SOURCES OF DATA:

The data for the present study were collected from two sources.

- 1) Primary data were collected from the 100 respondents and from the officials of Yerala Projects Society as well.
- 2) Secondary data were collected from the office documents in the office of the Yerala Projects Society, Website of YPS, Books, Journals etc.

6) TOOLS USED FOR COLLECTION OF DATA:

The following tools and techniques were used for collection of data.

- 1) **Interview Schedule:** An interview schedule was prepared for collecting data from beneficiaries keeping in view the objective of the study. The data from the beneficiaries were collected with the help of pre-tested interview schedule.
- 2) **Interviews with officials of Yerala Projects Society:** These interviews were conducted for obtaining information regarding role of Yerala Project Society in implementation of watershed development projects.
- 3) **Personal Observation and Camera:** The information was also collected by means of personal observation of the project area, cropping

pattern etc. The researcher has also taken photographs of the watershed areas.

7) PERIOD OF DATA COLLECTION:

The data for the present study were collected during September 1, 2004 to February 28, 2005.

8) ANALYSIS AND INTERPRETATION OF DATA:

The codifiable and quantifiable data were processed on computer by using SPSS 13.0 software made available in the Department of Sociology, Shivaji University, Kolhapur, and the computer out-put is used for analyses of data.

CHAPTERIZATION SCHEME:

Keeping in view the objectives of the study, the data is organized and presented in following chapters:

CHAPTER- III: ROLE OF YERALA PROJECTS SOCIETY IN WATERSHED DEVELOPMENT PROJECTS

In the third chapter, a brief profile of Yerala Projects Society is presented and its role in the development of watershed projects in the study area is explained.

CHAPTER- IV: IMPACT OF WATERSHED DEVELOPMENT PROJECTS

The fourth chapter is based on the analysis of empirical data, which aims at describing the impact of Watershed Development Projects on the beneficiaries and the ecology in the study area.

CHAPTER- V: SUMMARY AND CONCLUSIONS

The fifth and final chapter is designed to summarize the findings of the present study.

Against this background the next chapter is designed to introduce Yerala Projects Society and its role in watershed development projects.

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