

OUTREACH DIVISION DISCUSSION PAPER NO. 10

FOOD SECURITY AND NUTRITION

**MONITORING FOR DEVELOPMENT — CAN INDIA
LEARN FROM INTERNATIONAL EXPERIENCE?**

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Abstract

The food production-food security and nutrition relationship in India remains paradoxical after nearly three decades of food self-sufficiency. Malnutrition among the Indian pre-schoolers is nearly twice as high as in sub-Saharan Africa and more than three times as high as in China. Lack of information-based decision-making in designing food and nutrition policies is identified as a missing link in converting food self-sufficiency into nutritional well-being. Presenting institutional challenges for monitoring food security and

nutritional status as an input in food and nutrition policy making, this paper examines the role of major food and nutrition monitoring systems that are in place in India for designing food and nutrition policies. The paper draws lessons from experiences within India as well as other countries, where several systems of monitoring the food security and nutritional status of the population have been successful in designing household food security and nutritional interventions.

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In the past three decades India has achieved one of its major development goals -- national food self sufficiency which has resulted in prevention of recurrent famines that were documented in several regions of the country in the early and middle part of this century. As a result, food production has kept pace with the population increase for the past twenty years.

The Government of India has sufficient stock of food grains in reserve which has been effectively used to stabilize the fluctuations in food prices. Government interventions based on this surplus food, have also assured relief to drought stricken areas in the form of public works and other food for work programs. With the recent trade and macroeconomic policies that favor economic liberalization, India is poised for greater growth in its national income and an impressive growth in several sectors of the economy. In spite of these achievements, child malnutrition and poverty rates in India continue to be a source of international embarrassment (Economist, 1996).

Although several other developing countries, particularly in sub-Saharan Africa, have not made any significant progress in food production to keep-up with their population increases, through information-based decision making, they have made considerable efforts in addressing the problems of household food insecurity and malnutrition (Quinn and Kennedy, 1994). While there are several lessons that India could share with its counterparts in the developing world in the areas of agricultural transformation through green revolution

(Swaminathan, 1986), it has its own share of lessons to be learnt from the experience of other countries in the areas of information-based food and nutrition policy making.

The major objective of this paper, which is based on the field work and a comprehensive review of information based decision-making systems for food and nutrition interventions in several developing countries, is to document the lessons from international experience in designing and implementing food security and nutrition monitoring systems that could be useful for food and nutrition policy planning and decision-making in India. The missing link in public policy that failed in the past to convert the increases in food production into household food and nutrition security is discussed next. A review of institutional challenges for monitoring food security and nutritional status as an input in designing food and nutrition policy interventions in India is presented in section three. The lessons that could be derived from food security and nutrition monitoring efforts for the past two decades in several other developing countries is presented in section four. The concluding remarks form the last section.

Food Production-Food Security-Nutrition Linkages

India has the largest number of food-insecure people of any country in the world. It is estimated that about one-third of the country's population--over 300 million people--is unable to produce or purchase the minimum recommended daily energy intake. About 63 percent

of children under five years of age are underweight. Several reasons are attributed to the unabated levels of malnutrition and rural poverty among Indian households. A recent report of the National Nutrition Monitoring Bureau of India has concluded that during the last 10-15 years there has been no significant change in consumption of foods by the households despite an impressive increase in food production in the country. It also recognized that food and nutrition policies should address the issues of poor access to food and low purchasing power of the households and aim at household food security, to ensure adequate dietary intake by all members of the family (Reddy, et al, 1993).

It is becoming increasingly clear that having adequate food at the national level does not guarantee food security at the household level (Staatz, et al, 1990). Also, having enough food at the household level while necessary for the nutritional well-being of the individual members of the household, on its own is not a sufficient condition for improved nutrition (Babu, et al, 1993). Depending on the nature and extent of the food insecurity and nutritional problems, policy and planning efforts in India range from emergency food aid to short, medium and long-run food and nutrition interventions. Three broad categories of food and nutrition interventions that have been implemented in south Asian region are labor-intensive public work programs in the form of food for work, market-oriented programs such as subsidized food through public distribution systems (Vyas, 1993) and special feeding programs such as school feeding and supplementary feeding programs (Babu and Hallam, 1989). The concept of food security still remains at the national level in most of south Asian countries (Islam, 1992). At least for the next two decades, south Asian countries will

have to continue to depend on subsidized food distribution and direct feeding programs to reduce household food security (George, 1994). However, these interventions require targeting of the poor households for them to be sustainable and in order to minimize the budgetary allocation and increase the benefits. High implementation costs, leakages and poor administration of intervention programs often reduce the benefits to the needy population (Islam, 1992). While the need for strictly target-oriented measures have been recognized for quite sometime, lack of information on the characteristics of households that are badly in need of assistance and the impact of benefits derived from such interventions has been a major bottleneck in designing targeted food and nutrition interventions. Thus, one of the major missing links in converting national food self-sufficiency into adequate household food and nutrition security in India is the lack of information based decision making in designing food and nutrition policy interventions (Rao, 1995).

Institutional Challenges for Food Security and Nutrition Monitoring in India

Periodic monitoring of household food security and nutritional status is fundamental to generate adequate information on the situation of household food security as well as the factors that influence it (Babu and Quinn, 1994). The information generated through monitoring is necessary to design appropriate actions that will improve food security of the families as well as their nutritional status. It is also important to assess the impact of these interventions in regard to improvements in food security and nutrition (Rao, 1995). Recent

debate on the impact of structural adjustment and stabilization policies on the welfare of the population highlights the need for monitoring the effects of changing policies on poverty and household food and nutrition security (Gupta, 1995; Tendulkar and Jain, 1995; Suryanarayana, 1996).

Monitoring household food security and nutritional status for designing appropriate policy interventions requires a system of information generation, compilation, processing and analyzing the results at different levels of planning, policy making and project implementation (Sarma, 1992). The design of such an information system will depend on several factors including the existing infrastructure and the availability of resources to collect food and nutrition information and its analysis for policy making. To re-orient the food security and nutrition policy interventions by enhancing effective targeting, it is important to improve the process of decentralization and local level decision making (George, 1994). However, such efforts in India are thwarted by lack of institutional mechanisms to use the information at the lowest levels of decision making.

Several systems for data collection on the major food and nutrition indicators have been in operation in India. There are in general three main sources of food consumption and nutrition data in India. The first source is the consumption expenditure surveys conducted by the National Sample Survey Organization (NSSO). The NSSO collects detailed itemwise consumption data in quantity (wherever possible) and value terms for the last 30 days (365 days for durable items) from the sample households by interviewing the head of the

household and other members at the household. They are published in the form of reports for each round (NSSO, 1975) and in the journal Sarvekshana (the Journal of Survey) starting in 1981. The second major source of food consumption data is the Monthly Abstracts of Statistics published by the Central Statistical Organization (CSO). The CSO reports food consumption data based on the estimates derived indirectly from production data by the commodity flow method, by adjusting the production of different consumer goods and services for imports, exports, intermediate uses, government consumption and the changes in stocks.

The third source of data on food and nutrition intake is the National Nutrition Monitoring Bureau (NNMB) which collects data by two methods, (i) by the weight of raw food in which the total raw food intake of a household is weighed for the day of the visit, and (ii) by oral enquiry method in which the total food intake on the day preceding the day of the visit is acquired orally from each individual of the selected households. Started in 1972, the NNMB survey is conducted each year in ten selected states from a total sample of 750 households (NNMB, 1980). NNMB also collects data on child anthropometry, an indicator of individual food security and malnutrition through its nutrition assessment schedule.

Studies have conducted evaluations on the reliability of estimates of private consumption expenditure from these sources in terms of sampling procedures and interview methods, and concluded NSSO data have fewer inconsistencies than the other surveys (Minhas, et al, 1986; Kulkarni and Kumar, 1984). The consumption expenditure surveys

conducted by the NSSO are by far the most frequently utilized data source for food demand analysis both at regional and at national levels. However, average energy intake as measured through the consumption expenditure is a poor measure of household food security especially in the context of a large segment of the population remaining below poverty line (George, 1994). Hence, the data cannot be used for monitoring household food security over the period.

While adequate data are collected through NNMB for monitoring food security and nutritional status, lack of internal coordination and excessive administrative bureaucracy has rendered the use of data from NNMB survey less than effective for policy making purposes (Rao, et al, 1987). Recent initiatives by the National Institute of Nutrition which houses NNMB address the major concern that much data has been collected but less analysis has been conducted and much less has been reported. The reorganized NNMB surveys are currently used to develop simple and sensitive food and nutrition indicators that would be useful for both micro and macro planning.

In addition to these centrally organized data collection systems, the Integrated Management Information System of the Integrated Child Development Services (ICDS) presents a potential source of data for monitoring food security and nutrition with a national coverage. The ICDS is a national public health care program, started in 1975, implemented by Indian state governments, and assisted financially by the central government through the collaborative efforts of the ministries of Social Welfare, Human Resources, Child

Development, Rural Development and Health. In addition, a portion of food supplements in the project are provided by Catholic Relief Everywhere (CARE) and World Food Program (WFP). The goal of ICDS is to improve nutrition and health services to children under six years (known as undersixes) and to pregnant and lactating women. Its overall stated objectives of ICDS are to enhance mothers' capabilities to provide good physical and psychosocial child development and to reduce the prevalence of malnutrition, morbidity, and mortality (NFI, 1988). Interventions for undersixes include growth monitoring two to four times annually, medical checkups and referrals, oral rehydration therapy, immunizations, nutrition education, and informal preschool education. Pregnant and lactating women receive prenatal and postnatal care, iron and folate supplementation, and food supplements if malnourished. Services are targeted according to socioeconomic and anthropometric criteria (Kennedy and Slack, 1993). The program has grown from a targeted coverage of 1.5 million children under six in 1975 to 36 million in 1989. In 1976, 42 percent of children were less than 70 percent of normal weight for age; by 1982, this number had decreased to 17 percent. Between 42 and 63 percent of undersixes have growth charts in program areas (Pinstrup-Andersen, et al, 1995). The ICDS collects regular data on the services provided to under-three children; services provided to women in the community; community participation in ICDS activities; the integration of social welfare and health related activities; and the quality of preschool education activities.

The major problem in nutrition monitoring through ICDS is that the data collected are not analyzed at the local levels and as a result are not used in decision making in designing

interventions. In fact, the data collected at the village level is only analyzed at the national level. Thus, the local staff do not understand the need for the data which results in low quality of data being generated. Also the most effective infrastructure of ICDS in the form of Anganwadi workers at the village levels which is responsible for implementing food security and nutritional interventions is increasingly allocated to administrative tasks that do not directly contribute to improving food security nutritional status. Recent efforts by NNMB in joining hands with ICDS in selected areas to use the data collected from ICDS along with other secondary sources show high promise in developing a comprehensive food security and nutrition monitoring system for policy planning (Chung, et al, 1994).

There is much interest being shown today by state governments in India to establish information systems for monitoring household food security and nutritional status in order to plan better policies and intervention programs (Shekar, 1991). However, there are several outstanding issues related to the development and operations of such monitoring systems need to be addressed in any future work. An issue of central importance is the link between information and decision making which in recent reviews of country experiences, including India, has been shown to be a critically weak area (Habicht and Pinstrup-Andersen, 1990; Babu and Mthindi, 1994). Too often those responsible for designing monitoring systems have put the primary focus on data collection as in NNMB and only secondary attention has been given to the use of the data for decision making. As a result, the impact of the information produced on decision making in India has often been negligible. A related area is that of awareness and advocacy to elevate the recognition given to and understanding of

food security and nutrition issues in the policy arena. This includes the often unrecognized factors within the political economy which affect decision making in these areas. There are also issues related to data analysis, particularly the production of results which can clearly guide policy and program directions and decentralized systems of decision making such as states and districts in India. The final products of data analysis should closely match the information needs of the decision makers and should optimally include the provision of alternative

decision scenarios; however, in practice this is often not the case. Information on the costs associated with the implementation of food security and nutrition monitoring systems has also not been adequately documented. Costing information would help provide a basis for evaluating the benefits of monitoring systems. In addition, there are also methodological issues regarding the techniques used in data collection and processing, as well as the type of data to be collected and indicators to be monitored. A broad issue which cuts across all those identified above is having the institutional and human capacity to conceptualize, analyze and interpret problems of food security and nutrition in order to formulate appropriate policies and programs.

While these are but a few of the issues which pose a challenge to the future development of household food security and nutrition monitoring systems in India, there is a need to bring together experiences on these as well as other related issues to develop a knowledge base on such systems so that the current state-of-the-art can be disseminated to the

practitioners in the field. To date very little published material exists which documents practical field experiences of operating food security and nutrition monitoring systems. Based on a review of the already established systems of food security and nutrition monitoring in other developing countries in Latin America (Arnold, et al, 1990) and sub-Saharan Africa (Quinn and Kennedy, 1994), several lessons that could be learned for India from the international experience are provided in the next section.

Lessons from International Experience

India has a long history of well-established data collection infrastructure to generate information periodically at the household level (Srinivasan, 1989). This has been primarily the effort of indigenous scientists and researchers unlike in other parts of the developing world, particularly in sub-Saharan Africa where expatriate technical assistants have been mainly responsible for designing monitoring systems (Hassan and Babu, 1991). In addition, monitoring of food security and nutrition has not depended on external aid as in many sub-Saharan African countries. Lessons derived from implementation of food security and nutrition monitoring systems in several developing countries show that there has been considerable differences in the organizational structures that contribute to the differences in successes and failures in implementing food security and nutrition monitoring among these

countries (Babu, 1992a). Nevertheless, it is important to share the experience of these countries which have made considerable progress in these areas¹.

Food security and nutrition monitoring has been implemented for the past fifteen years in several developing countries. However, only a handful of these countries could provide concrete examples of the use of information for effective planning and policy making to alleviate food insecurity and malnutrition. Even among those countries which have established an operational system, several fundamental issues relating to the principles of food security and nutrition monitoring need to be redressed. Incorporating these issues with due consideration given to their operational significance presents a challenge in developing a comprehensive food security and nutrition monitoring system in India.

Multiple Objectives of Food Security and Nutrition Monitoring: Less clear objectives of the existing food and nutrition data collection systems in India make them less than effective in converting data into meaningful policies. Information obtained through food security and nutrition monitoring could be used for planning, programming and policy making in a wide range of sectors including, agriculture, health, economic planning, social welfare, labor and famine relief. To meet this information needs, five major objectives are frequently associated with food security and nutrition monitoring. They are use of information from the monitoring system for policy design and planning; for monitoring and evaluation of intervention programmes; for timely warning of impending food and nutrition crisis; for problem identification and for monitoring the effects of structural adjustment

policies on the poor (Babu and Pinstup-Andersen, 1994). While these five objectives could operate at national, state, district and block levels, it is essential to explicitly identify the objective of the system to be designed since it is impossible to address all five objectives with one type of monitoring system.

Infrastructure for Information Generation and Processing-Existing vs. Newly Created: India has an enviable reputation in having several organized data collection systems. However, infrastructure for data processing and analysis has been depressingly weak. It is essential to organize the system of data collection in such a way that it is operational with limited resources. Using the existing data collection infrastructure, provides an opportunity also to reduce the cost of data collection. For example, since the Anganwadi workers who have been collecting household information through the ICDS could be trained fairly easily in collecting data for food security and nutrition monitoring, cost of training could be substantially reduced. In processing the data collected from the households, it is also important to use the existing structure and strengthen them. This will substantially reduce the cost of human capacity building for data processing. To the extent possible, the data collection and processing activities in a monitoring system should be linked to the ongoing development activities. This would enable utilization of all possible means of data collection systems for improving the quality of information from the field.

Timeliness in Data Processing, Analysis and Policy Interventions: One of the common criticisms of any data collection systems in India is that too much of data is

collected, little is analyzed and much less is reported of what has been analyzed. The time gap involved in collection of data to analysis and analysis to reporting has been wide in the past, that when the information is given to the decision makers, it becomes too late to make effective use of it. Experiences in the past also show that, lack of human capacity and resources for data processing, analysis and designing policies has been a major impediment in generating timely information for interventions.

The nature of the data analysis system has also concentrated on compiling the data from various sources and analyzing them at a single point, which may delay the process of planning and designing policy interventions. For example, the data collected from NNMB has been analyzed only at the national level. To minimize this time lag, it is essential to decentralize the data processing and analysis systems. To meet this task, attention should be paid to develop appropriate, simple but flexible computer data processing systems at these levels. Also issues related to the sophistication in data analysis and time involved in various types of data analysis at various levels should be given due consideration. For example, simple tabular analysis of geographical classification of food insecure household would meet the needs of decision making at the district level, while a detailed analysis of pattern of expenditures of the households may be necessary to design policies that will influence food consumption behavior at the district, state or national level.

Matching the Data Analysis to the Decision Making Needs: Unless policy analysts who use the data collected through the monitoring systems understand the decision making needs,

converting data into policy alternatives will not be meaningful. At all levels of decision making namely, the national, state and district levels, the data analysis should closely match the needs of the decision makers and various alternatives intervention scenarios should be presented to them. Lack of attention to this important issue in the past has resulted in the information from data analysis not being fully used in the decision making process. This has also rendered several well-intended food security and nutrition monitoring systems such as NNMB data-driven rather than user-driven. One way to avoid the efforts of data collection and analysis becoming futile is to involve the decision makers in the use of information. This is best done by developing the monitoring system in continuous collaboration with the decision makers through the initial stages and frequently modifying content of information generated to improve the relevancy of information for their decision making needs. It is generally suggested that a user survey be conducted to identify the information needs before designing the monitoring systems which should be followed by periodical workshops for decision makers to generate feedback on how useful the information is to meet the decisions related to food and nutrition problems at various levels. This will increase the user participation in monitoring systems and reduce the probability of it becoming a process-driven system. Recent efforts in developing the management information system in ICDS, show large potential to integrate the user needs and data analysis (ICDS, 1994).

Information and Action Linkages: Once the data collected from the field have been converted into policy information, implementing these policies is usually left to the decision makers. The political, cultural and bureaucratic environment in which these decision makers

operate tend to influence the speed with which the decisions are converted into action. In addition, availability of timely information for making appropriate decisions and the quality of information presented to the decision makers, play an important role in strengthening information and action linkages. It is also the responsibility of policy analysts to go beyond presenting the information to help decision makers use the information to the fullest extent possible. One of the ways to achieve this is to provide decision makers with several policy alternatives that emanate from the information collected. This also provides the decision makers with some guidelines and avoids erroneous decision making.

Lack of capacity to convert information into decisions and decisions into action plans has been suggested as a crucial factor in implementing interventions. To increase the likelihood of the use of information in decisions and the timely implementation of intervention programmes and policies, it is important to organize workshops and other advocacy activities to sensitize the decision makers towards understanding of food security and nutrition issues and the importance of information based decision towards actions that reduce food insecurity and malnutrition.

Creating Demand for Information and Making Decision Makers Accountable: Lack of demand for food security and nutrition information obtained through monitoring systems from the decision makers has been frequently suggested as a factor that diminished the role of information in decision making. The assumption that the supply of relevant food security and nutrition information would create its own demand and result in effective decision

making towards intervention has been proven to be unrealistic by past experience in food security and nutrition monitoring. Thus, it is the responsibility of policy analysts to simultaneously find opportunities to create effective demand for their policy analysis outputs.

The issue of creation of demand for food security and nutrition monitoring is closely associated with the issue of holding government authorities, and donor agencies accountable for the food security and nutrition situation in a country. Unless this is done, provision of information and creating effective demand for such information alone will have very little impact on improving food security and nutritional status of the population.

Nature and Extent of Decentralization: Decentralizing the process of data analysis, decision making and implementing interventions to alleviate food insecurity and malnutrition has been suggested as an improvement to the currently operating national level systems of food security and nutrition monitoring. It is frequently suggested that the food security and nutrition monitoring systems that are designed and operated by the local communities could be more effective in implementing interventions and in evaluating their benefits (Immink, 1988). The decentralization of the process of information generation and use also has the advantage of reducing the time gap between problem identification and the necessary action. The decision making process also involves the officials who implement interventions which are locality specific. Decision making systems at the district and block levels provide adequate opportunities for such efforts in India.

National Focal Point for Information Dissemination: While the food security and nutrition monitoring systems could be implemented by various sectoral ministries to meet their objectives of their planning and policy interventions, it is important to have a focal office at the national level to have an overview of understanding of various systems operating in a country. This help in maintaining and providing an inventory of activities and in avoiding duplication of efforts among the sectoral ministries. More importantly, the food security and nutrition monitoring focal office should play the role of "clearing house" for information related to food security and nutritional situation of the population.

Recognizing the Political Economy Issues, Power Structures and Appropriate Planning of Institutions: Even with adequate capacity to implement food security and nutrition monitoring systems and to undertake food and nutrition policy analysis, no significant improvement could be made in food security and nutrition situation unless issues relating to the political economy are recognized and addressed on a state-specific basis. It is also important to recognize the power structure and its influence towards policy reforms and adjustments to make any headway in implementing food and nutrition policies. It is not enough to provide policy reports from data analysis although it is a necessary factor in convincing the politically inclined power structures towards making appropriate decisions. Related to this is the placement of policy analysis unit responsible for food security and nutrition policy making appropriately within the government structure to achieve the objectives of utilizing the capacity in food security and nutrition monitoring more effectively.

Lessons learned in the past decade in such attempts point to the variations in accomplishments in improving food security and nutrition situation due to this consideration.

Choice of Appropriate Indicators for Monitoring Household Food Security and Nutritional Status: Due to the inherent difficulties in identifying appropriate indicators of food security, learning from experiences in using various indicators related to food security and nutrition monitoring is important (Haddad, et al, 1994). Attention should be paid in understanding the validity, timeliness in data-collection, cost-effectiveness and usefulness of the indicators. It is generally recognized that there should be a trade-off in cost of information collection and the accuracy of information. Such trade-off could help in defining variables as indicators of food security.

Lack of Capacity to Design Policy Interventions: One of the important lessons learned for the design of successful food security and nutrition monitoring systems is of having a critical mass of people trained in food and nutritional policy analysis from various sectors including the university and other academic institutions. Lack of such capacity to translate the data collected through monitoring systems to policy decisions and to design interventions poses formidable challenge in India. Associated with this is the need for strengthening the policy analysis capacity at the decentralized levels. This would require reorientation of the approaches to capacity building in food and nutrition policy analysis to meet the specific requirements for such an approach.

Improving Communications Skills and Enhancing the Use of Information: One of the weakest areas in the process of translation of food security and nutrition information into useful decision in India is the effective communication and presentation of information. The presentation of information must be user-specific and sensitive to the level of decision making. This would enhance the use of information for intervention planning and appropriate decision making at national, state, and district levels. However, this requires additional and specialized training in developing communication skills and should form an integral part of capacity strengthening initiatives in food security and nutrition monitoring.

Multi-disciplinary Approach in Capacity Building: It is increasingly understood that the design and implementation of food security and nutrition monitoring systems involve a group of practitioners pulled together with various subject matter orientation. Specifically, there is a need to integrate the specialties such as nutrition, agriculture and other social sciences to meet the need for multi-disciplinary capacity building. This could be achieved by exposing nutritionists to the fields of socio-economic and food and nutrition policy analysis and expanding the knowledge of policy analysts in food security and nutrition related fields. This would mean that the curricula and courses of training and teaching institutions in India should be reviewed to promote such integration.

Concluding Remarks

Even after achieving food self-sufficiency at the national level, for the past three decades, India continues to incur a high cost by not reducing its level of child malnutrition. In this paper, it is argued that the uninformed, untargeted and poorly designed food and nutrition policies has been the major impediment in converting the food abundance into increased nutritional well-being. The fundamental requirement for well-informed, analysis-based food and nutrition policy intervention is a sound food security and nutrition monitoring system. Several developing countries, both in sub-Saharan Africa and Latin America, although lag behind in food self-sufficiency, have managed to protect their vulnerable population through properly designed food and nutrition monitoring and early-warning systems.

Due to inherent institutional and bureaucratic challenges, despite the long history of well-established infrastructure for data collection, the currently operating food security and nutrition monitoring systems in India have not been fully useful in policy planning and implementation. A review of the existing food security and nutrition monitoring systems and the recent developments in computerized information management system in India show a high potential for organizing an effective food security and nutrition monitoring system aimed at improved food policy making. The lessons drawn from reviewing food security and nutrition monitoring systems in several developing countries provide pointers for such efforts. However, the challenge of sustaining a monitoring system and using the information regularly in the decision-making processes at various levels remains. It should be noted, however, that unless the policy makers and policy advisers recognize the importance of information based decision making, the maximum benefits of such monitoring system will not be fully realized.

Notes

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