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Household Coping Strategies for Food Security in Indonesia and the Relation to  
Nutritional Status: A Comparison before and after the 1997 Economic Crisis

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Understanding household coping strategies to secure food in response to the 1997 economic crisis in Indonesia is a very important step in determining future policy actions. The crisis response and recovery programs could then be better focused, targeted, and economically planned. This study was conducted to support the above steps and to give future guidance in relation to crisis management. In addition to focusing on household coping actions between mid-1997 and 2000, household nutrient intake and the nutritional status of children under the age of five were investigated. An evaluation of the success or failure of coping actions was also made.

Between February and October 2000, data were collected from 182 households with children under five years of age in Purworejo district, Central Java. Interviews using pre-coded questionnaires were held, household food inventories were taken, intra-household food distribution was examined, and anthropometric measurements were made. Food inventory and anthropometric measurements were taken twice (Part 1: February-June and Part 2: August-October).

The most important food group was staple foods, in this case rice. The second and third most important were vegetables and plant proteins respectively. For most households, supplies of staple foods, vegetables, and fruit could be fulfilled through production at home. After the crisis, the four most difficult food groups to fulfill were staple foods, animal proteins, oil, and milk, although the percentage of households that noticed difficulties was less than twenty.

The effects of the crisis were clearly evident: 98% of households took at least one coping action in order to secure their food needs (on average, households took three actions). Owning farm animals, planting rice in the fields and food in gardens, and receiving free food from the weighing center were common actions in both 1997 and 2000. Receiving coupons for cheaper rice was common in 2000 but non-existent in 1997. A 3-point coping scale and a coping score were developed to assess the severity of coping strategies. A maximal action taken by 42% households was on scale 1 (less drastic coping actions). Households that took actions maximal at scale 3 were 14%. The average coping score was four (from a maximum of 15), with 77% of households receiving scores of five or less. Twelve households had 0 coping scores while one

household had a score of 15. Rural households facing unemployment and unstable incomes received higher coping scores, showing more coping actions and higher scales.

The average daily household availability of energy, protein, and iron increased from Part 1 to Part 2, while the availability of vitamin-A decreased (energy 2,035 to 2,278 Kcal; protein 46 to 52 g; iron 4 to 9 mg; and vitamin-A 621 to 522 RE). Household nutrient adequacy for energy, protein, and vitamin-A was above 80%, while for iron it was around 50%. The mean nutrient adequacies for energy, protein, and iron increased between Parts 1 and 2, but not by a statistically significant amount. The decrease in mean adequacy of vitamin-A between Parts 1 and 2, however, was statistically significant ( $P=0.011$ ). The changes in mean nutrient adequacies for Part 1 and 2 were as follows: energy 89 to 97%, protein 96 to 104%, iron 49 to 52%, and vitamin-A 82 to 51%. The percentage of households fulfilling 100% of their nutrient requirements was below 50 for both parts of the study, even though there was an increase in energy, protein, and iron adequacy. The percentage of households achieving 100% adequacy for vitamin-A, however, decreased.

The proportion of nutrients contributed by self-production was well over 90%. The most common variety of cooked food served was vegetables, followed by staple foods and plant and animal proteins. The intra-household food distribution data showed that the intake of staple foods, animal and plant proteins, and vegetables by female children under the age of five was lower than that of other household members. The average consumption of female adults was lower for fruit and milk.

The prevalence of wasted children (Z-score  $<-2$  SD) was 12 and 8% (mean -0.66 and -0.64 SD) for Parts 1 and 2 respectively, while the prevalence of stunted children was 31 and 23% (mean -1.24 and -0.94 SD). The differences in Weight-for-Height and Height-for-Age Z-score means between Parts 1 and 2 were not statistically significant. The prevalence of underweight children between 1997 and 2000 increased from 11 to 29% (mean -0.63 and -1.30 SD). The differences in mean Z-scores between various age groups were statistically significant ( $P<0.001$ ). From 79 children who had follow-up measurements, the mean WFA Z-score in 1997 was significantly higher than in 1999 or 2000 ( $P<0.001$ ). The nutritional status of female children, children who were younger at the start of the crisis, children who lived in nuclear family settings, and children who lived in lowland areas tended to deteriorate more during the crisis.

More households were categorized as successfully coping by using the nutritional status indicator (88% in Part 1 and 90% in Part 2) than the nutrient intake indicators (35% in Part 1 and 46% in Part 2). A combination of both indicators resulted in a moderate number of households categorized as coping successfully (41 and 54%). Household energy adequacy did not guarantee good nutritional outcome. Households with few members coped more successfully than larger households.

Interventions should focus on all levels of food security: micro, meso, and macro. Improvement in food availability at the household level can be achieved through increasing production assets. At a macro level, agricultural policy and a national family-

planning program are important to ensuring food availability on a long-term basis. To improve accessibility to food, education, and training programs should focus on employment opportunities, especially non-agricultural jobs. To improve food utilization, the public should be further educated on food diversification and nutrient absorption, particularly iron absorption. In addition, improvements in sanitary conditions, health status, and health services are still needed. Poverty alleviation, directed towards accelerating the growth of the agricultural sector and rural economy, should be addressed to guarantee food sustainability on a long-term basis.

The emergency Social Safety Net Program should now change to a longer-term Integrated Food and Nutrition Security Program. However, targeted intervention will still be needed for specific vulnerable groups, locations, and purposes. A community-based approach should be implemented in intervention programs. Favorable conditions and innovative programs can improve the role of women as gatekeepers of food security.