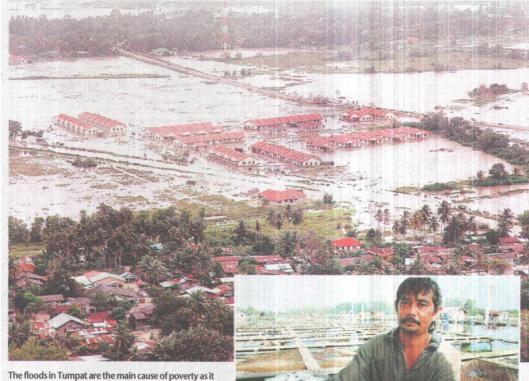
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## **Tumpat has the highest** number of hungry kids



affects the district's farming and aquaculture activities. (Inset) Fish breeders like Abdul Rahim Ismail are among the flood's victims. - Bernama pictures

## By Sonia Ramachandran sonia@nst.com.my

KUALA LUMPUR: A worryingnumber of children in Tumpat, Kelantan, are malnourished because of poverty and the frequent floods in the area.

A four-year study, which ended in 2004, found the area to have one of the highest number of malnourished children in the country. The study was conducted by

The study was conducted by the Malaysia Centre for Re-mote Sensing (Macres) through a joint venture with Universiti Sains Malaysia's medical faculty in Kelantan, Universiti Putra Malaysia and the Haolth Ministery

the Health Ministry. Macres director Darus Ah-mad said more than 7,000 children in the Tumpat district were involved in the clinical survey, with 1,423 children found to be moderately undernourished and 712 severely undernourished.

In addition, 314 mothers were interviewed at 26 clinics in Tumpat. "The results of this study

will help the authorities come up with better food aid pro-grammes in areas with high numbers of malnourished children," said Darus. "For example, the informa-

tion from this study could be used by the Health Ministry to monitor and analyse the nutritional status of any related

area," he said. According to World Health Organisation standards, the percentage of malnutrition was categorised as "low" when it was below 10 per cent, "medium" when it was be-

tween 10 and 19 per cent, "high" when it was between 20 to 29 per cent and "very high" when it hits more than

30 per cent.

Darus said from the analysis of data from the 26 clinics, almost half the children were in the "very high" category.

To address the is-Macres sue, had drawn up a malnutrition risk map which would pin-point areas that had high incidence of malnutriwhich would tion

Darus said Macres and its

partners had conducted the study in Tumpat as it was a low-lying area which was

prone to flooding. The floods which are the cause of poverty, affect the



Darus Ahmad says 712 out of the 7,000 children in the survey were severely malnourished

main economic activities in the district, such as padi or tobacco farming and aquaculture.

The floods also resulted in an increase in cholera and diarrhoea cases — the two contributing factors to malnutrition.

He said as income was a major factor contributing to malnutrition among the children, officials from the Rural and Regional Development Ministry could use the findings to identify areas which required attention.

attention. Darus said Sungai Pinang was identified as the most critical area in the district in terms of malnourished children followed by Wakaf Baru.

dren followed by Wakaf Baru. He said for the study, remote sensing and related technologies were used to identify the possibility of a relationship between the environment and malnutrition.

malnutrition. Satellite data like the ones from Ikonos, Landsat TM and SPOT were used to provide information on landuse changes, soil moisture, crop fertility, identification of floodprone areas and the creation of a digital elevated model. Darus added that a similar manping exercise would be

Darus added that a similar mapping exercise would be carried out in the Machang district, also in Kelantan.