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## 人類生態班

Dietary intake and the indicators of dietary change for females of reproductive age

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### Abstract

The objectives of this study are to understand amount of food consumption and nutrients intake, and changing dietary pattern for females of reproductive age in Lowland of Laos, Lahanam zone in Sonkhon district, Savannakhet province. We randomly selected 113 women aged 19-40 years in 5 villages. The period of the data collection is August to September, 2005. One subjects was visited for 3 days with 4 days interval. The mean of 3 days dietary records was used as the person s dietary data. The subjects living in Kokphok, where is in most traditional environment and lifestyle, consumed more cereals, other vegetables, mushrooms and sea/river weed than subjects living in other villages in average. The intake levels of fat 13g/day, calcium 406mg/day, iron 13mg/day, and retinal 320mg/day were very low compare with RDA of Thailand and WHO/FAO. The energy density values of protein, fat, carbohydrate in the subjects diet, were 13% , 7% , 80% . Fat intake level in energy density (%) was related sugars, fat & oils, meats, eggs positively, but cereals and other vegetables negatively. It related skinfold thickness positively. High economic status, such as owner of TV/Video, relate fat intake both in crude value and energy density value. These results suggest penetrate of cash economy change dietary pattern, and induce high fat intake and physical fatness.

### Introduction

Health and nutrition transition have been reported in Southeast Asia. Prevalence of non-communicable diseases increase and prevalence of communicable disease are still high. One of the important causes of non-communicable and communicable diseases will be their diet. Dietary monitoring is important for 2 reasons, understanding the cause of the diseases by assessment the food consumption, and evaluation of the intervention program. We should understand contribution of the diet on these diseases and health status, and we can make evidence-based health and nutrition policy for Lao population. We should monitor the diet for evaluation and improvement of the intervention program. However, there is not the dietary data for Lao population.

The objectives of this study are to understand amount of food consumption and nutrients intake, and changing dietary pattern for females of reproductive age in Lowland of Laos, Lahanam zone in Sonkhon district, Savannakhet province.

### Methods

We randomly selected 113 women aged 19-40 years in 5 villages of Lahanam area, Lahanam thong, Lahanam tha, Thakamlan, Dongbang, Kokphok. The period of the data collection is August to September, 2005.

Well-trained 19 village health volunteers weighed all foods and dishes that consumed by the subjects from

morning to after dinner directly at home. One subjects was visited for 3 days with 4 days interval. The mean of 3 days dietary records was used as the person's dietary data. The grams of food stu s in the dishes was estimated when the weight of dish was weight by standard recipes. The standard recipes to determine the portion size of seasoning in major cooking methods were obtained from the direct observation of some cooking during the field survey in summer, 2005.

The ASEAN food composition table, 2005 (1), was used as basic food composition tables in the FFQ. For some foods of whose compositions were missing, the data were obtained from alternative sources such as the Thai food composition tables (2) and the Japanese food composition tables, 5th revised edition (3).

## Results

Table 1 shows mean food group intakes by village. Villagers consume 424g/day of cereals (glutinous rice), 133g/day of vegetables, about 40g/day of fish and about 40g/day of meat in average. The subjects living in Kokphok, where is in most traditional environment and lifestyle, consumed more cereals, other vegetables, mushrooms and sea/river weed than subjects living in other villages in average. However, the mean amounts of protein foods, such as fish, meats, eggs, consumed by subjects living in Kokphok were not di er from those of other villages.

Table 2 shows mean energy and nutrient intakes in crude value by village. The subjects living in Kokphok consumed more energy, carbohydrate, calcium, phosphorus, iron, vitaminB1, niacin, vitamin C and fibre. However, their intake levels of the protein, fat, retinal and vitaminB2 were not di erent from those of other villagers.

Table 3 shows comparison between energy and nutrients intake and recommended dietary intakes by Thailand, WHO/FAO. The intake levels of fat 13g/day, calcium 406mg/day, iron 13mg/day, and retinal 320mg/day of these subjects was very low compare with RDA of Thailand and WHO/FAO.

Table 4 shows mean energy and nutrient intakes in energy density value by village. The energy density value of protein, fat, carbohydrate in this subjects diet, 13% , 7% , 80% .

Table 5 shows frequency of food consumption. The foods which were most frequently consumed in the dietary record, were glutinous rice, hot pepper, fish and green leafy vegetables. As a seasoning, salt and fermented fish were used most frequently.

Table 6 shows the Spearman correlation coefficients between physical status, and energy and selected nutrient intakes assessed with 3-day semi-weighed dietary record. Fat intake level in energy density (%) was related skinfold thickness positively, but not with body mass index. And fat intake level in energy density (%) related sugars, fat & oils, meats, eggs positively, but cereals and other vegetables negatively.

Table 7 shows difference of energy and selected nutrient intakes by owing TV/Video or not. TV/Video owing is an indicator of economic status of the household. The owner of TV/Video took more fat both in crude value and energy density value.

## Discussion

### Amount of food consumption and nutrients intake in Lowland Laos

There was the variation of the village in consumption of foods and nutrients intake. People living Kokphok have more amount of rice and high energy intake level than others. The subjects of Kokphok have the same BMI levels as other villagers as Dr. Natsuhara reported. So, the high energy intake levels will be because of high activity levels. They have the traditional dietary pattern of rice results high energy, carbohydrate and vitamin B1. And consumption of much vegetables results much calcium, phosphorus, iron, niacin, vitamin C and fibre. However the protein and fat intake in Kokphok were the same as subjects in the other villages.

The energy density value of protein, fat, carbohydrate in this subjects diet, 13% , 7% , 80% (Table 4), are

similar as those value of northeast Thailand in 1994-1995, 10%、5%、85% (4)(5). The % of protein and fat are slightly higher in lowland of Laos than those of northeast Thailand. These differences may come from the year of data collection.

The seasonal fluctuations of energy and nutrients balance were reported for Lao population living in the rain-fed area of north-east Thailand (4)(5). The data we reported in this paper was for rainy season. We did the same survey for the same subjects in dry season (February 2006) and we will compare the difference between 2 seasons to understand the diet, food consumption and nutrient intake, for this population.

#### Changes of dietary pattern

Fat intake level in energy density (%) was related sugars, fat & oils, meats, eggs positively, but cereals and other vegetables negatively. It related skinfold thickness positively. High economic status, such as owner of TV/ Video, relate fat intake both in crude value and energy density value. These results suggest penetrate of cash economy change dietary pattern, and induce high fat intake and physical fatness.

#### References

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Table 1 Mean food group intakes by village: results of 3-day semi-weighted dietary record for female 19-40 years old (August 2005)

Food groups	Unit		1	2	3	4	5	5 villages	Difference among 5 villages#	Multiple analysis
			Lahanam ton n=42	Lahana tha n=35	Takamuri n=12	Dongbang n=12	Kokphok n=12			
Cereals	g/day	mean	361.1	459.5	428.8	419.5	545.8	424.6	**	1<<2, 1<<5
		SD	89.5	126.6	127.8	96.4	131.4	124.4		
Nuts and seeds	g/day	mean	0.0	0.5	1.9	0.0	0.6	0.4	n.s.	
		SD	0.0	3.2	6.6	0.0	2.0	2.9		
Potatoes	g/day	mean	0.4	2.4	4.0	0.0	0.0	1.3	n.s.	
		SD	2.2	6.5	13.9	0.0	0.0	5.9		
Sugars	g/day	mean	1.7	2.8	4.1	0.2	0.0	1.9	n.s.	
		SD	3.6	5.7	8.7	0.4	0.0	4.9		
Confectioneries	g/day	mean	0.7	0.0	0.0	0.0	0.0	0.3	n.s.	
		SD	3.9	0.0	0.0	0.0	0.0	2.4		
Fats and oil	g/day	mean	1.0	3.7	6.6	2.3	0.0	2.5	n.s.	
		SD	2.1	19.4	13.3	4.2	0.0	11.8		
Pulses	g/day	mean	0.0	0.0	0.0	0.0	0.0	0.0	n.s.	
		SD	0.3	0.0	0.0	0.0	0.0	0.2		
Fruits	g/day	mean	19.0	18.9	15.6	12.8	8.8	16.9	n.s.	
		SD	34.9	36.9	24.8	24.4	10.5	31.6		
Green vegetables	g/day	mean	2.9	1.0	6.5	3.8	2.8	2.8	n.s.	
		SD	6.8	2.2	14.7	5.6	6.9	7.1		
Other vegetables	g/day	mean	97.4	122.6	179.5	149.6	196.8	130.0	**	1<3, 1<<5
		SD	71.7	68.5	104.0	99.4	88.8	85.5		
Mushrooms	g/day	mean	6.4	5.8	4.0	8.8	36.4	9.4	**	1<<5, 2<<5, 3<<5, 4<5
		SD	16.9	16.6	8.1	14.8	34.5	20.5		
Seaweed, riverweed	g/day	mean	0.0	0.0	0.0	0.0	8.3	0.9	**	1<<5, 2<5
		SD	0.0	0.0	0.0	0.0	21.0	7.1		
Seasonings	g/day	mean	18.1	20.8	24.0	20.2	21.7	20.2	n.s.	
		SD	15.1	25.2	11.4	8.9	7.6	17.5		
Fish, shellfish	g/day	mean	35.9	52.5	33.6	47.3	26.3	41.0	n.s.	
		SD	37.6	52.8	26.3	36.1	19.9	41.0		
Meats	g/day	mean	50.1	32.3	33.3	41.6	28.6	39.6	n.s.	
		SD	54.6	30.6	20.9	38.5	16.5	40.8		
Eggs	g/day	mean	6.4	2.7	7.4	0.9	0.9	4.2	n.s.	
		SD	13.2	7.0	13.8	3.2	3.2	10.2		
Milk	g/day	mean	0.5	0.7	0.0	0.0	0.0	0.4	n.s.	
		SD	1.5	2.3	0.0	0.0	0.0	1.6		

#1 Difference between 5 village was analyzed by 1-way ANOVA., with multiple analysis by scheffe method.

\*P&lt;0.05 \*\*P&lt;0.01, &lt; : 0.05 &lt;&lt; : 0.01

1.Lahanam ton 2.Lahanam tha 3.Takamuri 4.Dongbang 5.Kokphok

Table 2 Mean energy and selected nutrient intakes by village (crude value): results of 3-day semi-weighted dietary record for female 19-40 years old (August 2005)

Energy and nutrients		1	2	3	4	5	Difference among 5 villages#	Multiple analysis
		Lahanam ton n=42	Lahanam tha n=35	Takamurian n=12	Dongbang n=12	Kokphok n=12		
Energy (kcal/day)	mean	1514	1793	1711	1675	2177	1709	1<<5
	SD	387	430	446	381	496	457	** 1<<2, 1<5
Protein (g/day)	mean	50.7	54.8	51.4	54.7	60.3	53.5	
	SD	19.6	15.6	13.5	13.7	14.5	16.8	
Fat (g/day)	mean	13.1	13.0	16.2	11.8	14.5	13.4	
	SD	7.5	7.7	8.4	6.8	5.3	7.4	
Carbohydrate (g/day)	mean	294.0	359.6	333.8	335.5	448.0	339.3	** 1<2, 1<<5, 4<5
	SD	73.0	86.4	189	80.9	104.8	95.4	** 1<<2, 1<5, 2<5, 3<5, 4<5
Calcium (mg/day)	mean	338	387	503	408	601	406	** 1<<5, 2<<5
	SD	154	150	139	161	210	181	** 1<3, 1<<5, 2<<5
Phosphorus (mg/day)	mean	470	555	596	541	748	547	** 1<<5, 2<5, 4<5
	SD	150	145	171	125	193	172	** 1<<5, 2<<5, 4<5
Iron (mg/day)	mean	11.0	12.7	13.1	12.0	17.6	12.6	** 1<<5, 2<<5, 4<5
	SD	4.0	3.1	3.4	3.2	5.5	4.2	** 1<<5, 2<<5, 3<5, 4<<5
Retinol (µg/day)	mean	296	271	362	332	500	320	
	SD	275	202	239	307	486	288	
Vitamin B <sub>1</sub> (mg/day)	mean	0.65	0.78	0.71	0.74	1.00	0.75	** 1<<5, 3<5
	SD	0.21	0.22	0.21	0.20	0.25	0.24	** 1<<5, 2<5, 3<5, 4<5
Vitamin B <sub>2</sub> (mg/day)	mean	0.43	0.39	0.38	0.39	0.69	0.44	
	SD	0.52	0.18	0.14	0.18	0.34	0.37	
Niacin (mg/day)	mean	8.1	9.5	8.9	9.5	13.5	9.3	** 1<<5, 2<<5, 3<5, 4<5
	SD	2.8	3.1	2.8	2.0	4.7	3.4	** 1<<5, 2<<5, 3<<5, 4<5
Vitamin C (mg/day)	mean	39	43	54	51	75	47	* 1<<5
	SD	30	25	37	40	59	36	* 1<5
Fiber (g/day)	mean	4.4	5.0	6.1	6.4	7.3	5.3	** 1<<5, 2<5
	SD	2.1	1.4	3.1	2.4	2.1	2.3	** 1<4, 1<<5, 2<5

#1 Difference between 5 village was analyzed by 1-way ANOVA., multiple analysis by scheffe method.

\*P&lt;0.05 \*\*P&lt;0.01, &lt; : 0.05 &lt;&lt; : 0.01

1.Lahanam ton 2.Lahanam tha 3.Takamurian 4.Dongbang 5.Kokphok

Table 3 Comparison between energy and nutrients intake and recommended dietary intakes by Thailand, WHO/FAO.

		RDA of	RDA of	This study
		Thailand	WHO/FAO	
Energy	kcal/day		1950	1709
Protein	g/day	44	60.9 10~15%	53.5
Fat	g/day		48.8 15~30%	13.4
Carbohydrate	g/day			
Calcium	mg/day	800	1000	406
Phosphorus	mg/day			
Iron	mg/day		24	12.6
Retinol	mg/day	600	500	320
Vitamin B <sub>1</sub>	mg/day	1	1.1	0.75
Vitamin B <sub>2</sub>	mg/day	1.2	1.1	0.44
Niacin	mg/day	14	14	9.3
Vitamin C	mg/day	60	45	47
Dietary fiber	g/day			

Table 4 Mean energy and selected nutrient intakes by village (energy density value): results of 3-day semi weighed dietary record for female 19-40 years old (August 2005)

Energy and nutrients		1	2	3	4	5	Difference among 5 villages#	Multiple analysis
		Lahanam ton n=42	Lahanam tha n=35	Takamurian n=12	Dongbang n=12	Kokphok n=12		
Protein (%)	mean	13.2	12.3	12.1	13.1	11.1	12.6	*
	SD	2.1	1.8	1.5	2.1	0.7	2.2	
Fat (%)	mean	7.6	6.4	8.9	6.3	6.2	7.1	
	SD	3.2	2.7	4.5	3.4	2.5	3.2	
Carbohydrate (%)	mean	77.9	80.3	77.6	80.1	82.2	79.3	*
	SD	5.2	3.8	4.9	4.1	2.8	4.6	
Calcium (mg/1000kcal)	mean	220	213	300	240	272	234	**
	SD	81	55	117	65	52	79	
Phosphorus (mg/1000kcal)	mean	309	310	351	324	343	319	*
	SD	53	34	61	37	34	47	
Iron (mg/1000kcal)	mean	7.3	7.1	7.7	7.2	7.9	7.3	
	SD	1.5	0.9	1.1	1.0	1.0	1.2	
Retinol (mg/1000kcal)	mean	193	150	217	185	210	183	
	SD	165	105	139	148	167	144	
Vitamin B <sub>1</sub> (mg/1000kcal)	mean	0.43	0.44	0.42	0.44	0.46	0.43	
	SD	0.06	0.05	0.04	0.05	0.03	0.05	
Vitamin B <sub>2</sub> (mg/1000kcal)	mean	0.27	0.22	0.22	0.24	0.31	0.25	
	SD	0.24	0.11	0.07	0.10	0.10	0.17	
Niacin (mg/1000kcal)	mean	5.3	5.2	5.1	5.7	6.1	5.4	
	SD	1.1	0.9	0.8	0.9	1.1	1.0	
Vitamin C (mg/1000kcal)	mean	25	24	31	28	32	27	
	SD	19	13	19	19	19	18	
Fibre (g/1000kcal)	mean	3.0	2.9	3.5	3.9	3.3	3.1	
	SD	1.4	0.7	1.4	1.4	0.4	1.2	

#1 Difference between 5 village was analyzed by 1-way ANOVA., multiple analysis by scheffe method.

\*P&lt;0.05 \*\*P&lt;0.01, &lt; : 0.05 &lt;&lt; : 0.01

1.Lahanam ton 2.Lahanam tha 3.Takamurian 4.Dongbang 5.Kokphok

Table 5 Frequency of food consumption: results of 3-day semi weighed dietary record for female 19-40 years old (August 2005)

Food groups	Number of person#1	Frequency #2
<b>Fish</b>		
Fish without bones (incl crab, shell)	113	409
fresh and raw	0	0
fresh and heated	0	0
preserved (incl dried,	14	21
Fish with bones (incl crab, prawn)	34	48
fresh and raw	0	0
fresh and heated	0	0
preserved (incl dried,	0	0
Minced fish ball	0	0
frog	41	71
without bones	0	0
with bones	0	0
<b>Fresh meats</b>		
Cow, buffalo, pork, goat	49	94
raw	0	0
medium heated	0	0
well heated	0	0
Chicken, duck, goose, wild bird	51	105
Rat, rabbit, wild animal	1	2
<b>Other animal foods</b>		
Dried meat	36	59
Sausage (Sakok)	7	9
Blood, liver	0	0
raw	0	0
heated	0	0
Insect (Chnai mengda, takaten)	24	34
Egg	25	35
<b>Vegetables</b>		
Green leafy vegetables (morning)	108	491
Young papaya	66	100
Tomato	9	13
Cucumber	8	9
Green beans (Mac tua)	40	27
Eggplant	82	35
Bamboo shoot	85	158
Mushroom	29	39
Bean sprouts	3	5
Pumpkin	16	20
Zucchini	26	31
Banana flower	12	17
Cabbage	5	5
Lettuce	0	0
Carrot	0	0
River weeds	2	2
Corn	2	2
Sweet potato	1	1
(French) potato	0	0
Yam	0	0
Taro	0	0
Cassava	0	0
<b>Fruits</b>		
Citrus fruits (Orange, green mango,	44	74
Ripped papaya	0	0
Ripped mango	0	0
Bananas fruits	14	20
Melon, Watermelon	1	1
All others	14	23
<b>Nuts</b>		
Nuts, Peanuts	5	5

#1 Number of person who consume the food.  
 #2 Frequency of the food consumption for 113 females, during 3-day food records.

Food groups	Number of person#1	Frequency #2
<b>Sweets</b>		
Lao cakes	0	0
Boiled	0	0
Steamed	0	0
Grilled	0	0
Cakes	8	9
Biscuit	0	0
Baked banana	0	0
Fried banana	0	0
Desserts (Nam wam)	5	6
Ice-cream	0	0
Jerry	0	0
Packed snacks (Kanom kieb kum)	0	0
Candy	1	1
<b>Beverages</b>		
Drinking water		
Soft drinks	2	2
Tea	0	0
Coffee	4	5
Orvalin	2	2
Sugarcane juice	0	0
Coconut juice	0	0
Nam monoy / nam phaknok	0	0
Fresh fruit juice	1	1
Soyamilk	0	0
Milk (fresh)	1	1
Milk (powder)	0	0
Condensed milk	7	9
Yogurt	0	0
<b>Alcohol</b>		
Beer	0	0
Rice wine (Lao sab)	0	0
Rice wine (Lao ha)	0	0
Liquor (Lao Lao, Laokhao)	0	0
Lao det	0	0
Whisky	0	0
<b>Noodle/bread</b>		
Noodle	55	65
Rice	41	61
Wheat	5	4
Tapoca	0	0
Bread	4	4
with condensed milk	0	0
with pate	0	0
<b>Rice</b>		
Non glutinous rice	10	11
Glutinous rice	113	985
<b>Cooking methods</b>		
Oil/fat	64	54
Oil/fat for frying	0	0
Lard	0	0
Vegetable	0	0
Hot pepper (chili) use	112	769
Garlic use	92	252

Foods not on the list	Number of	Frequency #2
onion	40	281
low carotene veg	30	34
coconut milk, cream	19	22
rice flour	75	131
salt	111	1084
fermented fish	93	790
fish sauce	20	31
sugar	50	113
other seasoning	5	6

Table 6 Correlations between physical status, and energy and selected nutrient intakes assessed with 3-day semi weighed dietary record

		Body mass index	Skinfold thickness	Energy intake	Fat intake (energy density)	
		kg/m <sup>2</sup>	mm	kcal	%	
		Unit	n=113	n=113	n=113	
Physical status	Body mass index	kg/m <sup>2</sup>	1	.253 (**)	0.086	
	Skinfold thickness	mm	.860 (**)	.202 (*)	.263 (**)	
	Hemoglobin level	g/dl	0.094	0.035	-0.169	-0.012
	Systolic blood pressure	mm Hg	.263 (**)	0.158	0.057	-0.092
	Diastolic blood pressure	mm Hg	.195 (*)	0.187	-0.085	-0.093
Energy and Nutrient intake (Crude value)	Energy	kcal/day	.253 (**)	.202 (*)	1	-0.131
	Protein	g/day	.197 (*)	.210 (*)	.852 (**)	0.102
	Fat	g/day	.292 (**)	.380 (**)	.615 (**)	.645 (**)
	Carbohydrate	g/day	.234 (*)	0.141	.965 (**)	-.313 (**)
	Calcium	mg/day	0.159	0.143	.719 (**)	-0.047
	Phosphorus	mg/day	0.172	0.126	.873 (**)	-0.153
	Iron	mg/day	.194 (*)	0.126	.870 (**)	-0.176
	Retinol	mg/day	0.129	.220 (*)	.412 (**)	0.055
	Vitamin B <sub>1</sub>	mg/day	.236 (*)	0.184	.916 (**)	-0.177
	Vitamin B <sub>2</sub>	mg/day	0.158	0.171	.560 (**)	-0.015
	Niacin	mg/day	0.143	0.132	.866 (**)	-0.12
	Vitamin C	mg/day	0.147	.195 (*)	.506 (**)	-0.148
	Dietary fiber	g/day	0.142	0.066	.587 (**)	-.223 (*)
Energy and Nutrient intake (Energy density value)	Protein	%	0.001	0.114	-0.077	.527 (**)
	Fat	%	0.086	.263 (**)	-0.131	1
	Carbohydrate	%	-0.017	-0.171	0.145	-.814 (**)
	Calcium	mg/1000kcal	0.008	0.034	.211 (*)	0.057
	Phosphorus	mg/1000kcal	-0.062	-0.043	0.038	-0.052
	Iron	mg/1000kcal	0.03	-0.014	0.097	-0.06
	Retinol	μg/1000kcal	0.061	0.173	0.128	0.101
	Vitamin B <sub>1</sub>	mg/1000kcal	0.069	0.024	0.163	-0.03
	Vitamin B <sub>2</sub>	mg/1000kcal	0.054	0.086	0.096	0.093
	Niacin	mg/1000kcal	-0.047	-0.012	.201 (*)	-0.001
	Vitamin C	mg/1000kcal	0.069	0.134	.186 (*)	-0.085
Dietary fiber	g/1000kcal	-0.022	-0.083	-0.03	-0.175	
Food consumption	Cereals	g/day	.249 (**)	0.165	.919 (**)	-.330 (**)
	Nuts and seeds	g/day	0.007	-0.043	0.167	0.147
	Potatoes	g/day	-0.082	-0.119	0.034	0.149
	Sugars	g/day	-0.041	0.078	0.123	.311 (**)
	Confectioneries	g/day	-0.093	-0.049	-0.011	-0.006
	Fats and oil	g/day	0.081	.200 (*)	-0.104	.256 (**)
	Pulses	g/day	-0.151	-0.07	-0.02	0.072
	Fruits	g/day	0.084	0.054	.302 (**)	0.141
	Green vegetables	g/day	-0.013	-0.029	-0.086	-0.096
	Other vegetables	g/day	0.09	0.03	.428 (**)	-.250 (**)
	Mushrooms	g/day	-0.005	0.038	0.088	-0.141
	Seasonings	g/day	0.083	0.145	.495 (**)	0.067
	Fish	g/day	0.143	0.144	.330 (**)	0.125
	Meats	g/day	-0.019	0.105	0.055	.404 (**)
	Eggs	g/day	0.121	.222 (*)	-0.141	.431 (**)
Milks	g/day	-0.059	0.016	0.098	0.149	
Environment for access of food in household level	Number of Poultry		-0.007	0.106	0.111	0.133
	Number of Cattle/ Buffalo		0.059	-0.039	0.087	-.236 (*)
	Area of irrigated Rice Field	Hectares	-0.036	-0.044	0.007	-0.035
	Area of upland Rice Field	Hectares	-.232 (*)	-0.156	-0.035	-0.021
	Number of months of rice shortage	months	-0.001	-0.043	0.059	0.002
Household income/month	Keep		-0.093	0.073	0.005	0.036

The number is Spearman correlation coefficient

\*p&lt;0.05, \*\*p&lt;0.01

#1 except the person who could not measure the fat thickness by caliper because the thickness was 40mm and over.

Table 7 Difference of energy and selected nutrient intakes assessed with 3-day semi weighed dietary record by owning of TV/Video

		Unit	Own n=16		Notown n=31		Total n=113		Difference between own and not	
			Mean	S.D.	Mean	S.D.	Mean	S.D.		
Crude value	Energy	kcal/day	1724.4	490.2	1677.3	384.5	1709.0	457.1	0.61	n.s.
	Protein	g/day	54.9	18.4	50.7	12.6	53.5	16.8	0.22	n.s.
	Fat	g/day	14.3	8.4	11.4	3.9	13.4	7.4	0.04	*
	Carbohydrate	g/day	339.9	101.7	338.1	82.2	339.3	95.4	0.92	n.s.
Energy density value	Protein	%	12.8	2.3	12.2	1.9	12.6	2.2	0.18	n.s.
	Fat	%	7.5	3.6	6.2	1.9	7.1	3.2	0.04	*
	Carbohydrate	%	78.7	5.1	80.4	3.2	79.3	4.6	0.07	n.s.
Food group	Fish	g/day	46.3	46.9	30.0	21.4	41.0	41.0	0.05	*
	Meats	g/day	41.9	47.1	35.1	23.0	39.6	40.8	0.41	n.s.

#1 Difference between own and notowning of TV/Video was analyzed by 1-way ANOVA..