

# Social Assessment Methodology for Water Resources Development in the Lower Mekong Basin

Social Assessment Team

Mekong River Commission Secretariat

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# 1. Stated Objectives for Social Development in the BDP Assessment

Maintain livelihoods of vulnerable resource users

(Create) Increased employment generation in water related sectors

Enough?

# 2. Key question to be answered



- How many people,
- who lives where,
- will be negatively/positively affected how much
- through the <u>impacts</u> on
  - fish and aquatic resources, environment, irrigation, and economic opportunities
  - by changes predicted in the scenarios for water resources development
- How are those affected people likely to cope and adjust
- over time –
- what <u>strengths</u> and <u>weaknesses</u> do they have?



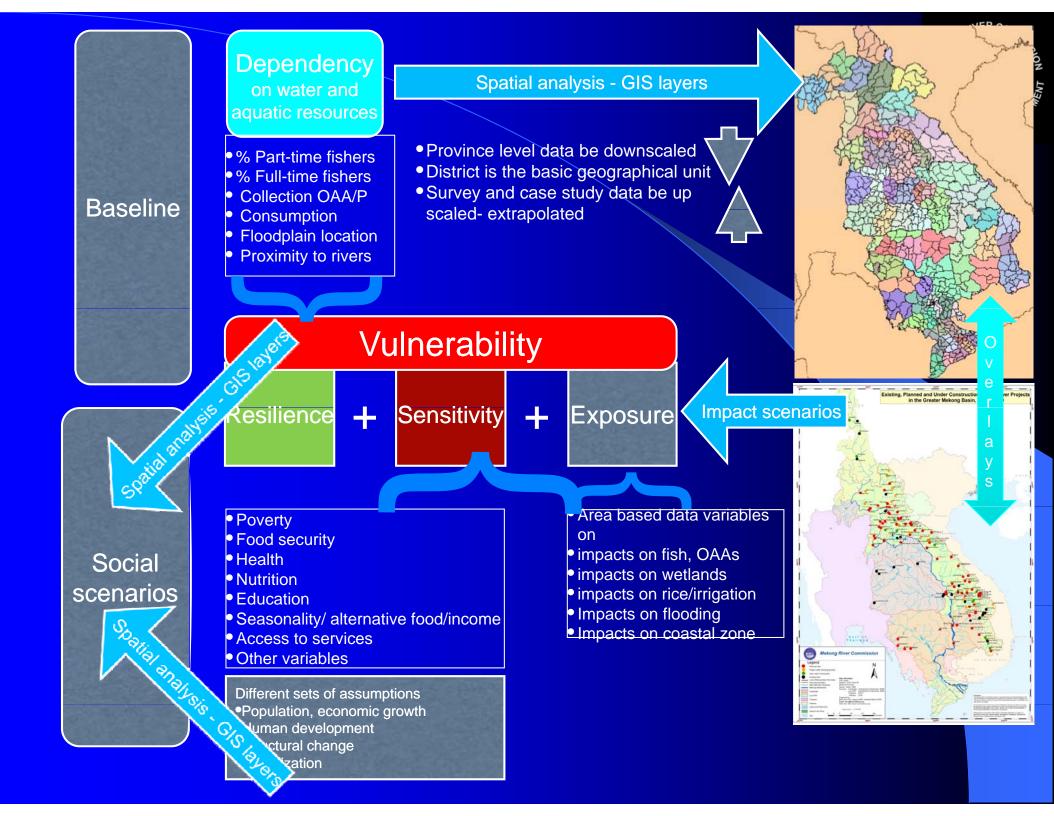
## 3. Assignment

- Develop the baseline information of people's dependence on river resources in different locations of the LMB
- Develop the baseline information on people's vulnerability and resilience to changes and impacts from the water resources development

## 4. Approach



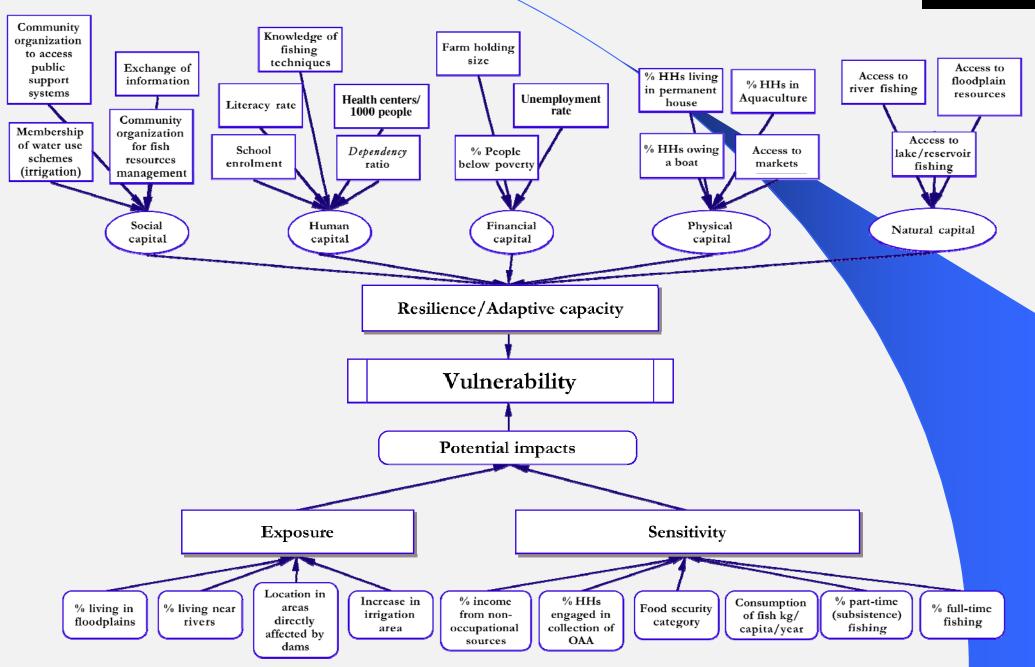
- Unfold 'dependency' on river and aquatic resources and select indicators
- Unfold 'vulnerability' and select indicators for
  - Exposure
  - Sensitivity
  - o Resilience
- Use GIS as database organizer and analytical tool
- Develop this into a flexible GIS tool that can be used for scenario creation (trend analysis) and visioning in stakeholder consultations

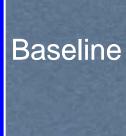


#### Dependency Spatial analysis - GIS layers on water and aquatic resources Province level data be downscaled % Part-time fishers District is the basic geographical unit % Full-time fishers Survey and case study data be up Collection OAA/P Baseline scaled- extrapolated Consumption Floodplain location Proximity to rivers **Vulnerability** Impact scenarios Exposure < Sensitivity + Resilience Area based data variables Poverty on Food security impacts on fish, OAAs Social Health impacts on wetlands Nutrition scenarios impacts on rice/irrigation Education Impacts on flooding Seasonality/ alternative food/income Impacts on coastal zone Access to services Other variables Different sets of assumptions Population, economic growth uman development ctural change ation

## Variables in a Sustainable Livelihoods framew







#### Dependency on water and aquatic resources

## 5. Fisheries



- % Part-time fishers
- % Full-time fishers
- Collection OAA/P
- In-depth studies of Mekong fisheries highlight that its importance is under-estimated in government statistics
- Actual level of participation in the fisheries obscured by occupational classes (farmer or fisher) that do not capture subsistence/part-time fishing
- Essential to use fisheries surveys and case studies, triangulate with government statistics
- Importance of collection of other aquatic animals (OAA)
- Key data sources
- Fisheries Sector Reviews, Lao PDR, Vietnam, Thailand, MRC 2008
- The magnitude of capture fisheries and aquaculture in the Mekong Delta in Viet Nam. MRC Technical Paper No. XX, Mekong River Commission, XX pp. 2008
- Socio-economics of the fisheries of the lower Songkhram River Basin, northeast Thailand, MRC Technical Paper, No. 17, January 2008
- Luangprabang Fisheries Survey, AMFC/MRC and LARReC/NAFRI; Vientiane, 2000
- An Giang Fisheries Survey, AMFC/MRC and RIA 2; Vientiane, 2001
- Tra Vinh Fisheries Survey, AMFC/MRC/RIA2 2001



## 5 And Fish consumption



Baseline

Consumption

- Well documented in Technical Paper that synthesize 19 studies
- Covers fish fresh and processed
- Provincial level consumption estimates are extrapolated from fisheries surveys and case studies
- Not broken into migratory/non-migratory species
- Key data sources
- Consumption and the yield of fish and other aquatic animals from the Lower Mekong Basin. MRC Technical Paper No. 16, 2007
- Living Standards surveys (VHLSS Vietnam 2004, 2004 Cambodia Socio-Economic Survey ( CSES 2004);
   Lao PDR Household Living Standard Survey 2006, Thailand Household Socio-Economic Survey 2000 (?)

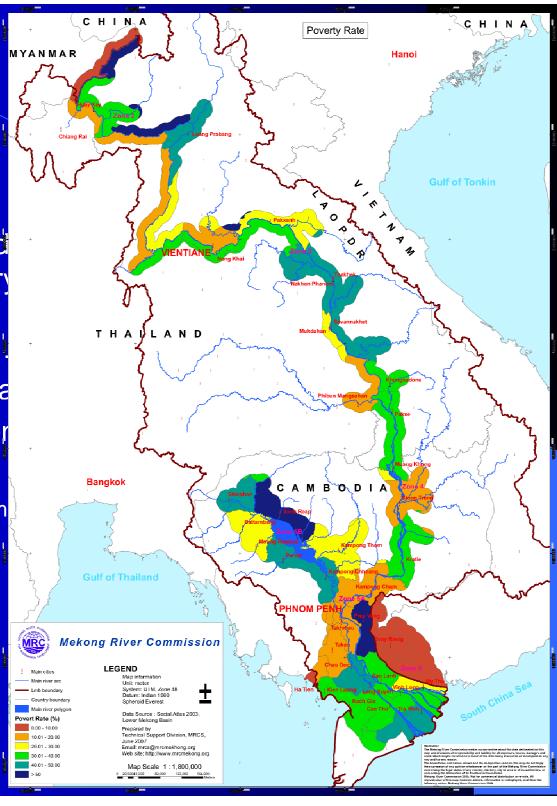
#### Dependency on water and aquatic resources

- Floodplain location
- Proximity to rivers

Baseline

- Population living in flood high percentage are very resources
- Proximity to main rivers
   changes in water flows a
- Special focus on location
- Key data sources
- GIS layers floodplains, settlem rivers

Example: using bufferzone around rivers and floodplains



Baseline

Dependency on water and aquatic resources

- % Part-time fishers
- % Full-time fishers
- Collection OAA/P
- Consumption
- Food security
- Floodplain location
- Proximity to rivers

# 7. Example Multivariate analysis - clustering

District	% part-time fishers	% Full-time fishers	Consumption kg/capita/year	Food security  – scale of 1-10	Cluster rank or value
District x	32	2	25	6	2
District y	65	7	52	4	1
District z	18	1	23	7	3

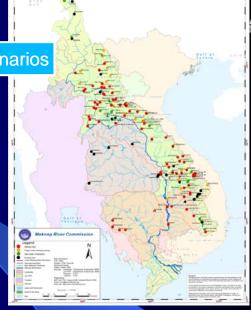
### 8. Vulnerability

Exposure



### Need for spatial information on impacts on:

- Fish and OAA
  - Migratory fish resources
  - Black fish and OAA resources
- Wetlands
  - Changes in productivity by area unit
  - Changes in access restrictions, transformation to farmland
- Rice/irrigation
  - Increases in irrigation areas –
- Flooding
  - Reductions/increases in flooded areas and durations
- Impacts on coastal zone saline intrusion
- Climate change to be decided whether to include



## 8. Kinds of possible impacts

Fisheries	Sudden significant decrease in fish catches, changes in timing of fisheries
Agricultural	Change in planting/harvesting cycles
Covariate economic impacts	E.g. related to closures of medium-large fishing operations
Adverse unsustainable coping strategies	Overfishing of certain species, distress sale of capital assets negatively affecting future earnings
Social impacts	Disputes about access to natural aquatic resources, land disputes due to appropriation of open access floodplains to rice fields
Health and diseases	Decrease in protein intake, increase in water- borne diseases

#### Vulnerability

Resilience

+ Sensitivity

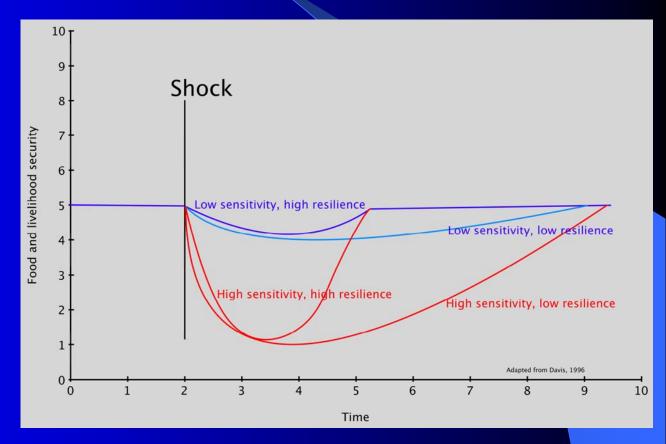
## 9. Sensitivity and resilience variables

## Sensitivity

- Dependency value/rank
- Seasonality
- Food security
- Poverty rate
- Alternative food/income

#### Resilience

- Access to social services
- Access to markets
- Education level
- Dependency ratio
- Access to aquaculture
- Other variables



#### Vulnerability



## 10. Food Security

- A number of Food Security analyses are available
- The results (values) from Food Security studies will be used
- Example Lao PDR:
- "It is estimated that around 157,000 ( $\pm$ 20,000) households, or 24 percent of the people in rural Lao PDR, would become food insecure if fishing, hunting and gathering were less productive or reduced (Taking into account how much the household diet depends on natural resources and their capacity to cope with the loss of these resources).

# 11. Comparable approaches used by others

- District Vulnerability Analysis Lao PDR 2005
- Poverty Atlas of Lao PDR
- Geospatial Vulnerability-Exposure-Sensitivity-Resilience (VESR) 2009

# 12. Some outputs of baseline social assessment

- GIS layers with tabular data values
  - Dependency layer
  - Exposure layer
  - Sensitivity layer
  - Resilience layer
  - Combined vulnerability layer
  - Other combinations

### 13. Creating Social Scenarios (Trend Analysis) Different sets of assumptions Population, economic growth

- Human development
- Structural change
- Urbanization
  - Changing the parameter values for dependency, exposure, sensitivity, resilience, according to
    - Linear trends
    - Assumptions about the future
  - Possibility of applying different assumptions to different localities

## The BDP assessment's overlapping dimension

Social

Bearable Equitable

Sustai nable

Environment

**Viable** 

**Economic** 

## 14. How we can make this assignment participatory?



- Virtual Forum
- Information of the baseline will consist of existing knowledge of stakeholders
- Possible further studies at the field level in the longer term
- Trend Analysis and changes/impacts assessment with working groups and stakeholders
- Series of BDP Forums at regional, transnational, national and tributary level
- Possibility in organizing a social working group in each of the countries and meet periodically



Cembodia NE	Kry	de 11,	73 11,97	0	100.0%	Whole	606,903	606,903	22.77 0.	3.04	2.60	0.63	4.79	11.69 34.4	46 18.22	0.84	3.45	5.20 0	1.25	1.70 11.44	29.66	13,820	382	1,843	1,578	379 2,909	7,092	20,911 11,05	6 510	2.094	3,156 15	1,032	6,943	17,999	7.68	1.0 4	1,662.1 606.9
Cambodia NE	Mondi	d Han 13)	13,45	212	98.5%	Part	34,041	33,513	11.39 0.	1.52	1.30	0.31	2.40	5.84 17.3	23 9.11	0.42	1.73	2.60 0	1.13 0	0.85 5.72	14.83	382	11	51	44	10 60	196	577 305	14	58	87 4	4 26	192	497	3.84	1.0	128.7 33.5
Cambodia NE	Raten	a Rim 11,	11,75	0	100.0%	Whole	98,995	98,995	22.77 0.	3.04	2.60	0.63	4.79	11.69 34.4	46 18.22	0.04	3.45	5.20 0	125	17/0 11.44 70 11.44 10 5.72 5.72 2.72 70 11.44 15 5.72 10 5.72	23.66	2,254	62	301	257	62 475	1,157	3,411 1,80	83	342	515 21	5 166	1,133	2,936	7.60	1,0	760.5 99.0
Cambodia NE	Stung	Trong 127	12.01	0	100.0%	Whole	85.162	85.162	22.77 0.	1.63 3.04	2.60	0.63	4.79	11.69 34.4 5.84 17.2 5.84 17.2 5.92 26.3 11.69 34.4	46 18.22	84	3.45	5.20 0	1.25	70 11.44	29.6	1,939	54	269	221	53 408	995	2,934 1,66	72	294	643 21	145	974	2,526	7.68	1.0	654.2 85.2
Cembodia nort	h Dider Mi	earcher 9,2	12 9,212	0	100.0%	Whole	71,722		11.39 0.	1.52	1.30	0.31	2.40	5.84 17.2	23 9.11	42				85 5.72	3 3		23	109	93	22 172	419	1,236 653	30	124	186 9	9 61	410	1,064	3.84	1.0 2	279.9 71.7
Cambodia nort	h Proah	Vihoar 14.)	331 14,03	0	100.0%	Whole	125,274	125.274	11.39 0.	1.52	1.30	0.31	2.40 3.23 4.79	5.84 17.2	23 9.11	42	1.73	2.60	.13	572	1.83	1.4	39	190	163	39 300	732	2,158 1,14	1 53	216	326 16	6 106	717	1,858	3.84	1.0	481.2 126.3
Cambodia SE	Phy	Viring 4.7	62 4,166	596	87.5%	Part	993,741	869.523	21.00 0. 22.77 0.	21 0.08	0.15	2.25	3.23	5.92 26.1	92 16.80	28	0.10		1.90	2.72	19.52	18.2	181	73	133 1.	.953 2.805	5,145	23,405 14,60 7,876 4,16	8 241	83 789	265 78	81 996	2,366 2,615	16,974	7.08	1.0 6.	.160.1 869.5
Cembodia SE	Svey	Rieng 2.5	66 1,350	1,616	45.5%	Port.	502,365			.63 3.04	2.60	0.63	4.79	11.65 34.4	46 18.22	84	3.45	5.20	1.25	70 11.44	29.64	5,3	14	694	594	143 1,096	2,671	7,876 4,16	192	789	1,189 57	T 389	2,615	6,779	7.66	1.0 1.	755.9 228.6
Cambodia 5W	Kampor	g Spec 6.5	65 6,752	212	97.0%	Port	629,076		11.59 0.	1.52	1.50	0.31			23 9.11	42	1.75	100	1.13	65 5.72	14.63			926	793	191 1,462	3,563	10,507 5,65	\$ 256	1,052	1,586 76	6 518	3,469	9,044	3.84	1.0 2	.542.6 609.9
Cambodia 5W	/ Kan	pot 4.7	18 1,952	2,766	41.4%	Part	555,047	229,592	11.39 0: 11.39 0:	1.52	1.50	0.31	2.40	5.84 17.3 5.84 17.3	23 9.11	0.42	1.73	2.60 0	1.13 0	0.85 5.72	14.83	2,614	72	349	296	72 550	1,541	3,955 2,69	96	396	597 29	9 195	1,513	3,464 38	3.84	1.0	881.8 229.6
Cambodia SW	/ Koh I	Coreg 12.	501 224	11,777	1.9%	Port	138,767	2.591	11.39 O.	1.52	1.30	0.31	2.40	5.84 17.3	23 9.11	0.42	1.73	2.60 0	1.13 0	0.85 5.72	14.83	30	1	4	3	1 6	15	45 24		4	7 0	0 2	15		3.84	1.0	10.0 2.6
Canbodia 5W	/ Kong	Palin 5,6	91 1,091	0	100.0%	Whole	606,903	606,903	11.39 0.	1.52	1.30	0.31	2.40 3.82	5.84 17.1 7.19 38.1	23 9.11	0.42	1.73	2.60 0	1.13 0	0.85 5.72	14.83	6,910	191	921	769 1	190 1,455	3,546	10,456 5,52 28,869 16,21	255	1,047	1,578 70	6 516	3,471	8,999 18,617	3.54	1.0 2	.331.1 606.9
Combodia 8W	200	en 3.4	50 3.480	- 0	100.0%	Whole	830,008	830,008	23.60 0.	28 0.10	0.19	2.73	3.62	7.19 30.1	19 18.40	0.34	0.12	0.37	.09 1	1.33 3.31	21.71	19,090	210	85	164 2	.265 3.255	5,040	28,069 16,27	2 280	67	308 604	56 1,154	2,744	18,417	7.76	1.0 6	1440.2 830.0
Cambodia TS	princy h	learch 6.1	48 6,148	- 0	100.0%	Whole	606,903	606,903	22.64	38 0.70	1.38	7.35	8.57	15.74 41.8	88 18,11	1.84	0.80	2.76 2	.88 3	3.04 11.32	29.43	13,740	838	427	838 4	370 5,203	11,675	25,415 10,91	2 5,157	486	1,675 1,74	1,845	6.876	17,842	7.64	1.0 4	635.3 606.9
Cambodia TS	Detail	nhang 11.	SA 11.85	0	100.0%	Whole	833,119	633,119	17.68 1.	32 0.70	1.60	6.20	7.22	17.64 34.7 26.13 52.1	72 14.14	1.76	0.00	3.20 2	46 2	2.56 10.80	24.54	14,750	1,100	567	1.333 5	165 6.014	14,199	28,929 11,79	4 1.466	666	2.666 2.00	966 2,133	8,998	20.781	5.96	1.0 4	569.1 A33.1
Cambodia T5	Sampon	g Chan 9.4	63 7,367	2,096	77.9%	Part	1,690,035		32.66 2.	.94 0.70	2.52	7.20	6.77		13 25.60	3.92	0.60	5.04 2	.66 2	2.43 15.04	40.64	42,126	3,670	927	3,317 9.	478 8,910	26,583	68,629 33,70	f 5,160	1,053	6,635 3,75	791 3,159	19,799	53,500	10.60	1.0 14	4,211.4 1,316.4
Cambodia TS	meons	Critinal 5.2	84 5,284	0	100.0%	Whole	438,753	438,753	54.32 2.	7.76 0.70	3.60	10.80	11.96	29.82 84.1	14 43.46	3.68	0.80	7.20 4	132 4	4.24 20.24	63.70	23,833	1,211	309	1,580 4,	739 5,246	13,084	36,917 19,00	6 1,615	351	3,159 1.80	1,860	8,880	27,947	18.33	1.0 8.	1,040.2 438.8
Cambodia TS	Kampon	g Thorn 12/	12,44	7 0	100.0%	Whole	597,752	697,762	31.00 2) 36.40 1, 41.28 1, 48.08 1,	1,00 0.70	2.40	7,40	9.04	21.54 52.5 17.79 54.1 15.45 56.3 18.01 66.6	54 24.80	2.67	0.80	4.80 2	1.96	3.20 14.43	39.23	18,530	1,196	418	1,435 4,	.423 5.401	12,873	31,403 14,82	1,594	476	2,869 1,79	No 1,915	8,623 13,823	23,448	10.46	1.0 6.	251.3 597.8
Cembodia TS	Kan		64 3,564	- 0	100.0%	Whole	1,129,333	1,129,333	36.40 1.	.50 0.70	2.24	5.00	8.35	17.79 54.1	16 25.12	2.00	0.80	4.46 2	2.00	2.96 12.24 1.76 12.60 2.96 11.76	41.36	41,108	1,694	795	2,530 5.	647 9,427	30,692 14,223 5,746	61,200 32,80	4 2,259	903	5,059 2,25	3,343	13,823	46,709	12.26	1.0 13	3,867.9 1,129.3
Cembodia TS	Phnom	Perit 31	4 374	- 0	100.0%	Whole	1,080,214	1,050,214	41.28 1.	.74 0.70	2.44	5.60	4.96 8.35	15.45 56.7	73 33.62	2.32	0.80	4.66 2 3.84 2	124	1.76 12.66	45.02 50.22	43,353	1,627	739	2,563 5.	881 5,212	14,223	59,576 34,66	2 2,436	840	5,125 2,35	152 1,848	12,663	47,285	13.93	1.0 14	4,625.3 1,050.2
Cambodia TS	Pur	SAC 11,	77 9.754	1,823	84.3%	Part	378,619	319,013	48.08 1/	,44 0.70	1.92	5.60	8.35	18.01 66.0	09 38.46	1.92	9.80	3.84 2	124 2	2.99 11.76	50.22	15,338	459	226	613 1.	.786 2,663	5,746	21,084 12,2	1 613	266	1,225 711	15 944	3,762	16,022	16.22	1.0 6.	1,174.4 319.0
Cambodia TS	Siem	Roap 11.	64 11.96	0	100.0%	Whole	731,266	731,266	27.60 17	744 0.70	1.16	8.20	9.93	21.43 49.0	03 22.08	1.92	0.80	2.32 3	1.28 3	3.52 11.84	33.92	20,183	1,063	515	848 5.	.996 7,259	15,671	35,854 16,54	1,404	585	1.697 2.30	999 2,574	8,658	24.805	9.31	1.0 6.	1.838.8 731.3
Cembodia TS	Tonie	54p 2.5	68 2,568	- 0	100.0%	Whole	0	0																				-									
Lao POR cent	re Bolikh	armay 14,	14,36	38	99.7%	Port.	186,600	186,111	19.33 4.	1,76 0,07	0.12	0.21	13.69	18.82 38.1	16 15.46	6.32	0.06	0.24 0	1.08 4	4.86 11.57	27.04	3,596	883	12	22	36 2,548	3,903	7,101 2,87	5,177	14	64 11	5 904	2,154	5,032	9.24	0.50 1	(719.5 93.1
s,ao POR cent	re Khanir	nuane 16,	16,54	99	99.4%	Part	310,800	308,951	19.33 4.	0.07	0.12	0.21	13.69	18.62 38.1	16 15.46	6.32	0.08	0.24 0	1.09 4	4.00 11.57	27.64	5,972	1,465	21	36	ti3 4,230	5,816	11,788 4,77	1,954	23	73 25	1,500	3,575	8,353	9.24	0.50 2	154.5
Las POR COST	navan	21	21,39		100.0%	Whole	700,200	766,700	13.23 4	74 0.07	0.12	0.21	13.69	18.62 38.1	15.46	6.32	0.08	0.24 0	74 4	4 14 15 17	37.64	4 335	3,634	51	50	AT 4.476	54,423	17,04	4,045	20	141 63	7 1 1 1 1 1 1	3.763	20,710	9.74	0.60 7	1730 MOUT
Lan POR CHIC	The Street A	tunicine 13.	13,37		100.0%	THTION OF THE PARTY OF T	505,900	520,900	19.33	9.07	0.12	0.21	13.69	18.62 38.1	16 15.46	4.52	0.00	0.24 0	50	4.00 11.57	27.04	11.575	2.636	40	70	4,476 25 8 6F	6,196	22 455 4.24	2,047	27	141 2	1,987	5,163	6,039	9.04	0.50	103.5 103.1
Lan POR cont	re rosne s	normage 0,3	99 2.355	- 0	100.0%	Whole	41.750	61 700	19.33	74 0.07	0.12	0.21	13.69	18.62 38.1	16 15.46	4.72	0.00	0.24 0	100	4.60 11.57	27.64	11,556	253		70	13 647	1 164	3 354 34	3,761	- 2	15 41	2,902	234	1668	9.04	0.50	570.0
Las POR cont	to Kurne	humana 13	06 7.60	5777	57.15	Part	228,800	130,596	19.33	74 0.07	0.12	0.21	13.69	18.82 38.1	16 15.46	6.32	0.08	0.24 0	108 4	4.86 15.57	27.04	3,535	619	-	15	27 1.769	2.458	4.993 3.63	876	10	31 1	1 624	1.515	3.531	9.24	0.7	206.6 90.1
Las POR DAY	n Bu	100 7.6	24 7.631	0.723	100.0%	Whose	129,600	129.600	13.25 3.	126 0.06	0.12	0.14	9.38	12.90 26.1	15 10.60	433	0.06	0.16	1.06	3.33 7.93	18.53	1.717	421		10	18 1.216	1,672	3.389 1.37	562	7	21 7	7 431	1,078	2.402	7.34	0.50	951.2 64.8
Lan POR cont	h House	hards IT	113 1.82	15,741	9.1%	Pari	279.100	25.329	13.25	25 0.00	0.00	0.14	9.38	12.60 34.1	15 13.60	433	0.05	0.16	106	3.33 7.43	18.53	334	82	1	2	4 236	327	663 364	133		4 1	1 64	1,028	2,402 469 7,711	7.34	0.50	185.9 12.7
Lao POR north	h Lugar F	habara 16	53 16.16	0	100.0%	Whole	416,100	416,100	13.25 3. 13.25 3.	25 0.00	0.04	0.14	9.38	18.82 38.1 12.90 26.1 12.90 36.1 12.90 36.1	15 13.60	4.33	0.05	0.16	06 3	3.33 7.43	18.53	5,513	1383	19	34	58 3,905	327 5,366	642 244 10,882 4,41	1,854	22	67 27	3 1,345	3,361	7,711	7.34	0.5	(653.8 208.1
Lao POR nod	b Luacon	antha 4.5	56 0.950	0	100.0%	Whole	130,900	130,900	13.25 3.	25 0.05	0.00	0.34	9.34	12.50 26.1	15 13 65	4.33	0.05	0.16 0	1.09	3.33 7.93	18.53	1,734	420	- 6	11	16 1,226	1,689	3.423 1.36	567	7	21 7	7 436	1.038	2.426	7.34	0.50	960.7 65.5
Lao POR nort	h Quáo	maky 12	AT 12.14	0	100.0%	Whole	239,600	239,800	13.25 3.	125 0.05	0.00	0.14	9.38	12.50 36.1	15 13.66	4.33	0.05	0.16	1.09	3.33 7.93	18.53	3,177	780	- 11	19	34 2,250		6.271 2.54	5.039	12	39 12	3 756	1,902	4,444	7.34	0.6 5	759.9 151.1
Las POR nort	h Phon	958V 15.	158 14,19	1,164	92.4%	Part	174,400	161,178	13.25 3.	26 0.06	0.08	0.14	9.38	12.90 26.1	15 10.60	4.33	0.06	0.16 0	1.06 3	3.33 7.93	18.53	2,135	524	7	13	23 1,513	2,080	4,215 1,76 8,763 3,62 3,606 1,54	690	8	26 9	536	1,278	2,987	7.34	0.50 1	.182.9 80.6
Lau POR nort	h Xayai	HARY 16.	HS 15.36	0	100.0%	Whole	332,800	332,800	13.25 3: 13.25 3:	25 0.06	0.08	0.14	9.38	12.60 26.1	16 10.60	4.33	0.05	0.16 0	1.06 3	3.33 7.83	18.83	4.404	1.062	16	27	47 3,123	4,294	8,763 3,62 3,600 1,54	1,443	17	54 18	9 1,10T	1,278 2,640 1,153	4,147	7.34	0.3 2	442.6 103.2
Lao POR soul	fr Atte	9.4	21 9.421	- 0	100.0%	Whole	99,400	99,400	19.37 4.	1.75 0.07	0.12	0.21	13.72	12.90 26.1 12.90 26.1 18.86 38.3	23 15.45	6.34	0.08	0.24 0	1.08 4	4.66 11.59			472	7	12	20 1,363		3,800 1,54	630	- 6	23 8	8 484	1,153	2,693	7.78	0.50	773.8 49.7
Lao POR sout	h Cham	pasak 15,	15,46		100.0%	Whole	571,900	571,900	19.37 4.	1.75 0.07	0.12	0.21	13.72	18.66 38.3	23 15.45	6.54	0.00	0.24 0	1.09 4	4.66 11.59	27.66	11,676	2,718	58	68	118 7,845	59,784	21,842 8,84	9,624	43	196 43	2,762	6,631	15,492	7.70	0.50 4	(452.0 286.0
Lao POR sout	h Sara	iane 10,	10,16	0	100.0%	Whole	292,500	292,300	19.37 4.	.75 0.07	0.12	0.21	13.72	18.86 38.3	23 15.49	6.34	0.08	0.24 0	1.09 4	4.86 11.59	27.09	5,661	1,389	19	35	60 4,010	5,513	11,174 4,52	1,852	22	69 24	1,422	3,589	7,918	7.78	0.50 2	275.5 146.2
Lan POR sout	th Sok	ong 7,6	47 7,947	0	100.0%	Whole	73,200	73,200	19.37 4.	1.76 0.07	0.12	0.21	13.72	18.86 38.3	23 15.49	6.34	0.08	0.24 0	1.09 4	4.86 11.59	27.09	1,418	348	5.	9	16 1,004	1,381	2,798 1,13	4 664	4	17 6	356	849	1,983	7.78	0.4	569.8 29.3
Thaland NE	Revisat C	harson 3.2	41 3,241	0	100.0%	Whole	364,776	364,776	21.13 4.0	1,04 0.06	0.50	0.93	6.61	12.14 33.3	27 16.91	5.38	0.06	1.01 0	137 2	2.34 9.17	26.07	7,639	1,441	19	170	133 2,369	4,331	11,870 6,03	1,021	21	359 13	13 837	3,274	9,102	8.42	5.00 3	(,005.1 2,105.0
Thaland NE	Bun	num 10,	176 10,07	9	100.0%	Whole	1,466,276	1,468,276	21.30 3.	1.98	_		0.35	16.53 31.4	63 17.64	5.30	0.00	0.00 0	1.00 2	2.25 7.55	24.59	51,766	5,916	0	0	0 9,456	55,374	47,874 25,30	8 7,666	0	0 0	3,354	11,242	36,692	8.49	5.90 13	2,635.5 0,790.8
Theired ME	Chart	property 12.7	44 1.20	5.054	30.3%	Part	474 221	94 907	21.34	1.00	_		6.35	16.53 31.6	63 17.64	5.00	0.00	0.00	100 2	2.25 7.65	24.55	3.633	327	<u> </u>		0 600	11,112	3 663 3 64	5 500		9 9	0 214	242	2 5 5 5 4	0.40	5.00	500 A 500 D
Thaland NE	Chian	s Moi 22.	21 2.138	20.183	20.0%	Part	1,472,403	141,030	21.30 3	1.08	_		6.35	16.33 31.4 16.33 31.6 16.33 31.6 16.33 31.6	63 17.64 63 17.64	5.30	0.00	0.00 0	100 2	2.25 7.55	24.59	2,622 3,004 23,680 10,580	561	0	0	0 896	588 1,457 11,854 9,496	3,662 1,61 4,461 2,40 35,165 18,54 26,076 16,44	747	0	0 0	318	717 1,065 8,598 6,043	2,554 3,468	E-49	5.90 1	197.3 832.1
Theland NE	Chian	g Rai 11.	43 11.51	133	98.9%	Part	1.124.554	1,511,752	21.30 3.	1.56			6.35	16.53 31.6	47.64	5.30	0.00	0.00 0	100 2	2.25 7.55	24.55	23,680	4.419	0	0	0 7.065	11,454	35,165 18,94	5.892	0	0 0	2.505	8,598	27.342	0.40	5.90 9	438.8 6.559.3
Thaland NE	Kele	5.6 min	6,837		100.0%	Whole	616,232	616,232	21.30 3				6.35	16.33 31.4	63 17.64	5.30	0.00	0.00 0	100 2	2.25 7.66	24.59	19,580	3,654	- 0	0	0 5,842	9,496	29,075 15,64	4.872	- 0	0 0	2,072	6,043	22,607	8.49	5.90 7	804.3 8.423.8
Theland NE	Rhon	Kaen 10)	10,60	9 0	100.0%	Whole	1,727,464	1,727,464	21.30 3; 21.30 3; 21.30 3; 21.30 3; 21.30 3; 21.30 3; 21.30 3; 21.30 3;	1.98			6.35	16.33 31.6	63 17.64	5.30	0.00	0.00 0	100 2	2.25 7.55 2.25 7.55	24.59	56,795 12,143	6,667	0	0	0 10.978	17,845	54,646 29,41 18,632 9,71	9,156	0	0 0	3,893	13,648	42,484 14,621	8.49	5.90 14	4,666.2 10,192.0
Thaliand NE	Lo	10.	995 10,00	5 592	94.4%	Port	603,859	570,105	21.34 3.		_		6.35	16.33 31.6		5.30	0.00	0.00 0	1.00 2	2.25 7.55	24.55	12,143	2,264		0	0 3.623	5,889	18,032 9,71	3.022		0 0	0 1,285	4,306	14,021	8.49	5.90 4	840.2 3.363.6
Theirest NE	Maria	alan d	4 4 4	- 0	100.0%	Williamin	942,171	SH2,171	21.30 3:	0.06	0.60	0.90	6.55	12.14 33.2	63 17.64	5.30	0.00	101 0	137 3	2.23 7.33	24.55 34.67	4.664	1,745	16	156 1	185 9.000	9,733	10.312 5.34	A 1665	10	312 15	16 717	7,117	8.061	8.43	5.90 7	603.7 LASS.7
Theland NE	Needoon	Phanos 5.5	30 5.530	0	100.0%	Whole	663.692			114 0.06	0.50	0.97				5.52	0.07	1.01 0	139 2	2.00 9.04	25.67	52,116 10,254	2.631	40	364 6	61 5.508	9.304	23,779 11,56	9 3.774	45	600 20	1.953			0.22	4.04 5	734.5 3.307.7
Thaland NE	Johan Ru	richasir 20,	20 19,88	840	95.9%	Port	2,550,204	2,446,783	21.84 4: 21.30 3:	1.948			6.35	10.33 31.6	63 17.64	5.30	0.00	0.00 0	1.00	2.25 7.55	24.59	52,116	9,726	- 0	0	0 15,549	25,275	77,392 41,61	3 12,968		0 0	5,514	6,725 18,482	60,175	8.49	5.90 20	0,773.2 14,436.0
Thaland NE	ping Bua	Lampf 4.1	35 4,131	0	100.0%	Whole	481,502	481,500	21.30 3.	1.008			6.35	10.33 31.6	63 17.04	5.30	0.00	0.00 0	100 2	2.25 7.65	24.59	10,256	1,914	0	0	0 3,060	4,974	15,230 8,20	2,552	0	0 0	1,085	3,637	11,842	R-49	5.90 4	DRR.D 2,840.9
Thaland NE	Nong	Khar 7.3	29 7,221	0	100.0%	Whole	881,711	881,711	21.13 4.	1,04 0.05	0.50	0.93	6.61	12.14 33.2	27 16.51	5.38	0.06	1.01 0	1.37 2	2.34 9.17	26.07	18,632	3,561	46	643 8	5,831	10,763	29,335 14,90	6 4,747	52	886 32	29 2,068	8,083	22,988	8.42	5.90 7	.426.5 5,202.1
Thatand NE	Pho	990 5.1	3,600	2,503	59.6%	Part	601,816	209,091	21.30 3	1.08			6.35	10.33 31.6	63 17.84	5.30	0.00	0.00 0	100 2	2.25 7.95	24.59	6,371	1,189	9	9	0 1,901	3,090	9,460 5,09	1,585	9	0 0	674	2,259	7,394	8.49	5.00 2	1,764.6
Thaland NE	Prieto	Ft 7.9	02 7 80	11,423	100.0%	Whole	1,252,116	1.252.116	21.30	198		-	6.35	10.33	63 17.04	530	0.00	0.00	100 2	2.25 7.66	26.59	26,670	4,927	, i	o o	0 7.967	12,934	39.604 31.3	6 6.636	1 0	0 0	3 2,922	9.452	30.794	8.49	5.90	0.630.5 7.387.5
Thailand NE	Sal	840 6.5	03 2.843	4,060	41.2%	Part	483,868	199,263	21.30 3	1.98			6.35	16.53 31.6	63 17.64	5.30	0.00	0.00 0	1.00	2.25 7.55	34.55	4,345	792	0	0	0 1,266	2,059	4,563 3,59	1,054	1 6	0 0	3 449	1,565	4,961	8.49	5.90 5	.691.9 1,175.8
Theland NE	Sakon I	Vakhon 9.5	26 9.520		100.0%	Whole	1,036,176	1,036,178	21.04 4	1.14 0.06	0.50	0.97	8.06	13.72 34.7	77 16.83	5.52	0.07	1.01 0	1.39 2	2.85 9.84	26.67	21,804	4,290	60	521 1.	.002 8.348	14,221	36,026 17,44	5,720	68	1,043 40	01 2,960	50,192	27,635	8.39	4.64 0	1,690.9 5,013.0
Thailand NE	5.5	5.6 Supplement	63 8,863	- 0	100.0%	Whole	1,402,616	1,452,818	21.58 3.	1.98			6.35	18.53 51.6	63 17.64	5.50	0.00	0.00 0	.60 2	2.25 7.55	24.55	29,660	5,576	- 0	0	0 8,915	14,491	44,371 23,91	4 7.435	- 0	0 0	3 3,561	59,554	34,500	8.49	5.90 11	1,909.9 8,276.6
Thalland NE	Su	fin 8.2	87 8,787	0	100.0%	Whole	1,325,694	1,325,694	21.30 3: 21.30 3: 21.30 3:	1.98			6.35	10.33 31.6	63 17.04	5.30	0.00	0.00 0	1.00	2.25 7.55	24.59	28,237	5,270	0	0	0 8.426	13,694	41,932 22,51	7,025	0	0 0	2,987	10,014	32,603	8.49	5.90 11	1,255.1 7,821.6
Thaland NE	bon Rat	chathar 15,	15,49	0	100.0%	Whole	1,686,300	1.696.300	21.30 3.	1.98			6.35	16.33 31.6	63 17.64	5.30	0.00	0.00 0	100 2	2.25 7.55	24.59	35,918	6,703	0	0	0 10.716	17,419	53,338 28,7	5 4.937	0	0 0	3,800	12,738	41,472	8.49	5.90 14	4,316.7 9,549.2
Thalland NE	UBSA	Than 11)	RJ 11,06	0	100.0%	Whole	1,459,097	1,459,097	21.30 3. 21.30 3.	.08			6.35	16.33 31.6	63 17.04	5.30	0.00	0.00 0	100 2	2.25 7.55	24.59	31,079	5,800	0	0	9,272	15,072	46,151 24,80	3 7,233	9	0 0	3,288	11,021	35,884	8.49	5.90 12	2,387.7 8,608.7
Vari Nam	Yaso	4.5	4.000 48 2.400	- 0	100.0%	White	2.077.000	2 077 000	34.60	198 199	6.32	0.06	6.33	12.64 43.4	44 23 44	0.77	175	12.64	100	1.47 16.66	24.59	79,640	1.196	3.206	12.121	3,549	26.346	102 685 41.51	2.060	3564	26.262	0 3,045	34.534	95.748	12.34	31 9	3,295.3
Viot Nam delt	ta Bac	Usu 2.4	91 2.491	0	100.0%	Whole	744,300	744,300	22.68 6.	29 135	0.31	5.38	0.14	13.47 36.1	15 18.14	8.38	1.54	0.62 2	1.15 0	0.06 12.74	30.88	16,881	4.681	1,007	229 4.	.008 101	10,026	26,906 13,50	6 6,241	1,144	458 1,60	103 36	9,482	22,986	7.60	9.9 5.	.659.1 7,383.5
Visit Nam chili	ia Ben	Tre 2.3	78 2.278	0	100.0%	Whole	1,305,400	1.305.400	22.68 6. 22.68 6.	29 138	0.31	5.38	0.14	13.47 34.1	15 18.14	8.38	1.54	0.62 2	115 0	0.05 12.74 0.05 12.74	30.88	29,606	8,209	1,766	401 7.	.050 177	17,583	47,190 23,64	10,946	2.007	803 2.81	112 63	14,430	40.315	7.60	9.9 9.	1525.3 12.949.6
Vivi Nam delt	to Cal	flau 5.1	5,121	- 0	100.0%	Whole	1,138,300	1,139,300	22.68 6.	29 138	0.31	5.38	0.14	13.47 34.1	15 18.14	8.38	1.54	0.62 2	1.15	0.05 12.74	30.88	25.859	7,165	1,541	350 6.	135 155	15,346	41,185 20,67	9,553	1,751	701 2,45	154 55	54,554	35,185	7.60	9.9 8.	1662.4 11,351.9
Viet Nam delt	a Can	Tho 3.6	62 3,562	0	100.0%	Whole	1,636,200	1,636,200	29.74 3.	1.43 1.45	3.31	2.72	2.54	13.65 42.7	79 23.79	4.58	1.65	6.63 1	.09 0	0.76 14.76	38.49		6,502	2,659	6,087 4	.999 3,920	23,968	78,579 43,60	8 5,403	3,022	12,174 2,00	1,390	26,509		9.97	6.51 18	8,308.0 11,953.7
Viet Nam delt	ta Dong	Thep 3.3	63 3,363	0	100.0%	Whole	1,578,200	1,578,200	42.44 3.	1.12 1.36	3.30	2.46	2.13	12.39 54.0	83 33.95	4.16	1.57	6.60 0	1.56 0	0.75 14.07	48.02		4,529	2,181	5,208 3.	.879 3,359		86,532 53,50	6,572	2,478	10,415 1,50	51 1,191	22,297	75,789	14.23	6.51 22	2,453.6 10,274.1
Viot Nam delt	a Kest	Hang 5.5	55 5.551	0	100.0%	Whole	1,524,000	1.524.000	22.68 E. 48.08 S.	29 1.35	0.31	5.38	0.14	13.47 36.1	15 18.14	8.38	1.54	0.62 2	.15 0	0.05 12.74	30.88	34,564	9.584	2.062	460 8.	207 207	29,528	55,092 27,61	1 12,779	2.343	937 3.29	283 73	19,415	47,066 26,245	7.60	9.9 11	1,587.4 15,118.1
Viol Nam det	ta Long	AA 4,4	92 1,274	2,718	39.5%	Part	1,330,300	525,469	48.08 5.1	1.67 1.22	0.28	4.86	0.12	12.14 60.3	22 38.46	2.66	1.39	0.86 1	.54 0	0.04 11.49	49.95	25,262	2,979	641	146 2	.661 64	6,381	31,643 20,21	3,972	728	291 1,03	120 23	6,035	26,245	16.12	3.1 8	1,629.0
Viot Nam delt	Sec 1		36 3.336		100.0%	Whole	1,191,000	1,191,000	22.68 6.	29 138	0.31	5.38	0.14	13.47 36.1	15 18.14	8.38	1.54	0.62 2	.15 0	0.05 12.74	30.88		7,490	1,611	366 6.	.413 162	16,042	43,054 21,61	9.596	1.831	783 2.59	165 57	15.173	36,782	7.60	0.9 0.	11,814.7
Viet Nam delt			64 1,663		70.3%	Port.	1,623,000	1,141,084	23.66 5. 22.68 6.	3.75	0.41	3.16	3.37	12.86 42.4 13.47 36.1	46 23.68	6.88	0.80	0.61	.26	1.20 16.95	34.63	33,776	5,892	802	462 3	604 3,850	14,611	48,387 27,63	7,656	911	924 1,44	HZ 1,365	12,456	59,519	9.92	12.5	1,323.2 14,263.5
Viet Nam delt	ta Tra-1				100.0%	Whole	976,300	976,300	22.68 63	1.29 1.35	0.31	5.38	0.54	13.47 36.1	15 18.14	8.38	1.54	0.62 2	1.15 0	0.05 12.74	30.88	22,188	6,152	1,323	301 5.	268 133	13,177	35,365 17,75	8,203	1,504	602 2,10	107 47	12,463	30,213	7.60	9.9 7	438.3 9,754.7
Visit Nam delt	ia Vent	org 1.5	28 1,528	0	100.0%	Whole	1,017,700	1,617,755	29.74 37	1.45	3.31	2.72	2.14	13.65 42.3	79 23.79	4.58	1.65	6.63	.09 0	0.76 14.76	38.45	30,268	3,493	1,474	3,374 2	771 2,173	13,284	43,552 24,2	4 4,657	1,675	6,747 1,10	108 771	14,358	39,173	9.97	6.51 10	0,147.1 6,625.2
Viet Nam Nights	and Birth F	PLUGE 6.7	71 357	6,414	5.3%	Part	654,600	36,075	14.63 2	46 0.66	0.78	2.61	0.62	6.54 21.3	22 11.75	3.29	0.75	156 0	.na o	0.22 6.62	18.37	530	89	24	28	73 22	236	766 424	119	27	56 29	9 8	239	663	4.92	4.07	177.6 146.8
Viet Nam Inights	and Dak	Lat. 19,	13,98	5,522	71.7%	Port	1,860,900	1,334,071	14.69 Z	.46 0.66	0.78	2.01	0.62	6.54 21.3	22 11.75	3.26	0.75	1.56 0	1.80	0.22 6.62	18.37	19,593	3,287	882	1,644 2,	684 625	8,721	28,315 15,47	4 4,382	1,002	2,088 1,01	174 293	8,838	24,513	4.92	4.07 6.	1,568.4 5,429.7
Viet Nam highls	and Gia	La: 15,	590 6,526 61 7,972	9,210	81.3%	Part	1,017,000	413,869	14.69 2/	.40 0.66	0.76	2.01	0.62	6.54 21.3 6.54 21.3	22 91.75	3.20	0.75	1.56 0	.00	0.22 6.62	16.37	6,675	1,020	274	324 6	133 256	2,706	8,764 4,66	1,365	311	048 93	97	1,813	5,029	4.92	4.07 2	1,684.5
vior Nam Nights	and Kon Lai C		61 7,972			Part	324,800 604,300	273,676	14.69 Z/	.46 0.66 .46 0.66	0.78	2.01	0.62	6.54 21.3	22 11.75	3.28	0.75	1.56 0		Vice 6.62	18.37	4,019	674	181	214	169	1,789	1,065 590	890	206	128 221	ev 60		5,029	4.92	4,07 1	347.5 1,113.9
Visc Nam - Nights						Port				0.66	0.78	2.01	0.62	9.54 21.3	11.75	3.26	0.75	1.50	0	0.22 6.62 0.22 6.62	18.37		1,24	33	-77	31	326	1,449 590	100		.9 40	11	332 940	922 2,606	4.92	4,01	
Viet Nam highle						Part	1,034,000			2.46 0.66	0.78	2.01	0.62	6.54 21.3 6.54 21.3	22 11.75	3.26	0.75	1.56 0		0.22 6.62	18.37	2,683	349	94	111 2	285 88		3,010 1,66	7 466	107	222 11-	14 31	540	2,666	4.92		695.4 577.3
Viet Nam Nights	and Quar	g Tri 4,7	95 733	3,972	15.6%	Part	580,600	90,406	14.69 2	1.46 0.66	0.78	2.01	0.62	6.54 21.3	22 11.75	3.26	0.75	1.56 0	1.80 0	0.22 6.62	18.37	1,326	223	60	71 1	182 56	591	1,919 1,06	2 297	68	141 77	73 20	599	1,661	4.92	4.07	445.1 366.0
Viet Nam highla	and Thus Th	ien Hue 4.5	87 463	4,124	10.1%	Port	1,063,500	107,374	14.69 27	.46 0.66	0.78	2.01	0.62	6.54 21.3	22 11.75	3.26	0.75	1.56 0	1.60	0.22 6.62	18.37	1,577	265	71	84 3	216 66	762	2,279 1,26	2 353	81	168 86	16 24	751	1,973	4.92	4.07	528.7 437.0