






Each country has appointed a National Focal Point Officer (NFPO) to coordinate national activities and liaise with the Project Coordination Office (PCO) hosted by the Philippine Department of Agriculture's Bureau of Animal Industry.

NATIONAL FOCAL POINT OFFICERS

Country	Name	Host Organization	E-mail Address
 Cambodia	Sar Chetra	Department of Animal Production and Health Ministry of Agriculture, Forestry and Fisheries	<a href="mailto:chetrass@gmail.com">chetrass@gmail.com</a>
 Lao PDR	Settha Sinthasak	Department of Livestock and Fisheries Ministry of Agriculture and Forestry	<a href="mailto:drsettha@gmail.com">drsettha@gmail.com</a>
 Myanmar	Okkar Soe	Livestock Breeding and Veterinary Department Ministry of Livestock and Fisheries	<a href="mailto:okkar92vet@gmail.com">okkar92vet@gmail.com</a>
 Philippines	Rubina Cresencio	Bureau of Animal Industry Department of Agriculture	<a href="mailto:rubina.cresencio@gmail.com">rubina.cresencio@gmail.com</a>
 Viet Nam	Phan Quang Minh	Department of Animal Health Ministry of Agriculture and Rural Development	<a href="mailto:pqminh@dah.gov.vn">pqminh@dah.gov.vn</a>

REGIONAL FOCAL POINT OFFICER

Imelda Santos

EAHMI Project Coordination Office  
Bureau of Animal Industry  
Visayas Avenue  
Quezon City, Philippines  
Email: [ijsantos62@yahoo.com](mailto:ijsantos62@yahoo.com)

LEAD TECHNICAL OFFICERS

Carolyn Benigno

Animal Health Officer  
Food and Agriculture Organization  
of the United Nations  
Regional Office for Asia and the Pacific  
Bangkok, Thailand  
Email: [Carolyn.Benigno@fao.org](mailto:Carolyn.Benigno@fao.org)

Raffaele Mattioli

Senior Officer  
Animal Production and Health Division (AGAH)  
Food and Agriculture Organization  
of the United Nations  
Rome, Italy  
Email: [Raffaele.Mattioli@fao.org](mailto:Raffaele.Mattioli@fao.org)



GCP/RAS/244/ITA

Environmental Animal Health Management Initiative  
for Enhanced Smallholder Production  
in Cambodia, Lao PDR, Myanmar, Philippines and Vietnam

Project Briefer

September 2013

The “Sub-Regional Environmental Animal Health Management Initiative for Enhanced Smallholder Production in Southeast Asia” (GCP/RAS/244/ITA) is an institutional strengthening and capacity building project of the Food and Agriculture Organization of the United Nations (FAO) and the Governments of Cambodia, Lao PDR, Myanmar, Philippines and Vietnam, with funding from the Government of Italy.

The EAHMI project was first implemented in the Philippines in 2006 and has been extended in 2009 to include Cambodia and Lao PDR. It has been further expanded in 2012 to incorporate Myanmar and Vietnam.

EAHMI Philippines serves as the Lead Country coordinating all the country activities.



Environmental animal health management (EAHM) relates to those aspects of animal health and welfare that are determined by physical, chemical and biological factors, external to the animal in the local farm setting and the broader environmental context of animal production. It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors that may have adverse effects on the health of animal and human populations, and the wider environment.



With increasing demand for livestock products and the complex mosaic of traditional, semi-intensive and highly intensive forms of livestock production that prevail across much of South East Asia, the Food and Agriculture Organisation (FAO) of the United Nations is keen to pursue a broad, holistic approach to disease control and environmental protection.



Photo credits: I. Santos, FAO and AVET 2007



Photo credits: EAHMI Phase II and III

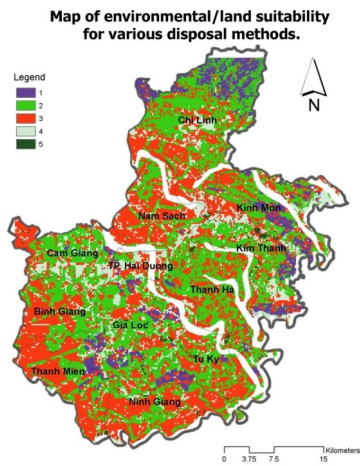
EAHM is being promoted in line with FAO’s long-term goal of sustainable agricultural and rural development. EAHM studies seek to assess and understand animal diseases in their environmental and production/farming system context, both in space and time. With relatively minor, progressive changes in animal husbandry practices and modification of the production environment (better nutrition, waste-management, bio-security, vector and intermediate host reduction, movement control, land use zoning), substantial benefits can accrue to animal and human health, and the environment.

Many EAHM options are already widely practiced by farmers around the world, but not by all farmers in all countries. Innovations must be appropriate to local circumstances and take time to prove themselves and become established. Sound local knowledge, careful preparation and long term commitment are required to promote change and the adoption of new practices.

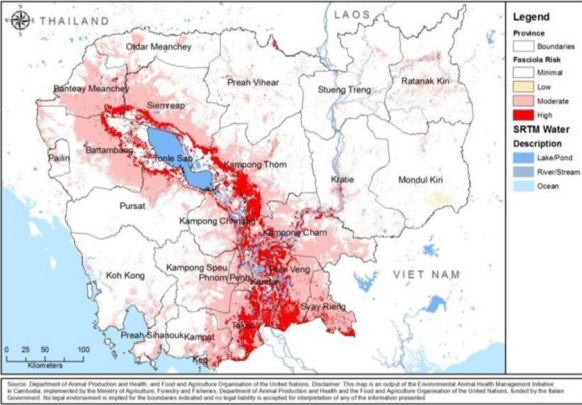


Photo credits: I. Santos, FAO, EAHMI Lao PDR and NFMDTF (Philippines)

EAHM interventions can be classed into: **on-farm measures**, mainly to do with animal husbandry and farm management; and **area-wide measures**, involving collective action, collaboration, organization and strategic planning. Some examples include land use planning and zoning; surveillance and analysis; disease risk assessment and mapping; control of vectors and intermediate hosts; control of animal movements; isolation of suspect disease carriers; policy formulation and legislation and international agreements.



Land Use Planning: Map of Potential Locations for Disposal Methods in Hai Duong Province, Vietnam, 2012



Control of Vectors and Intermediate Hosts: Fasciola risk-mapping in Cambodia, 2011



Photo credits: EAHMI Phase III

Enhance international collaborations, knowledge and information sharing: The Secondment Programme allows secondees to undergo Geographic Information System mentoring

The following are the outputs of the project :

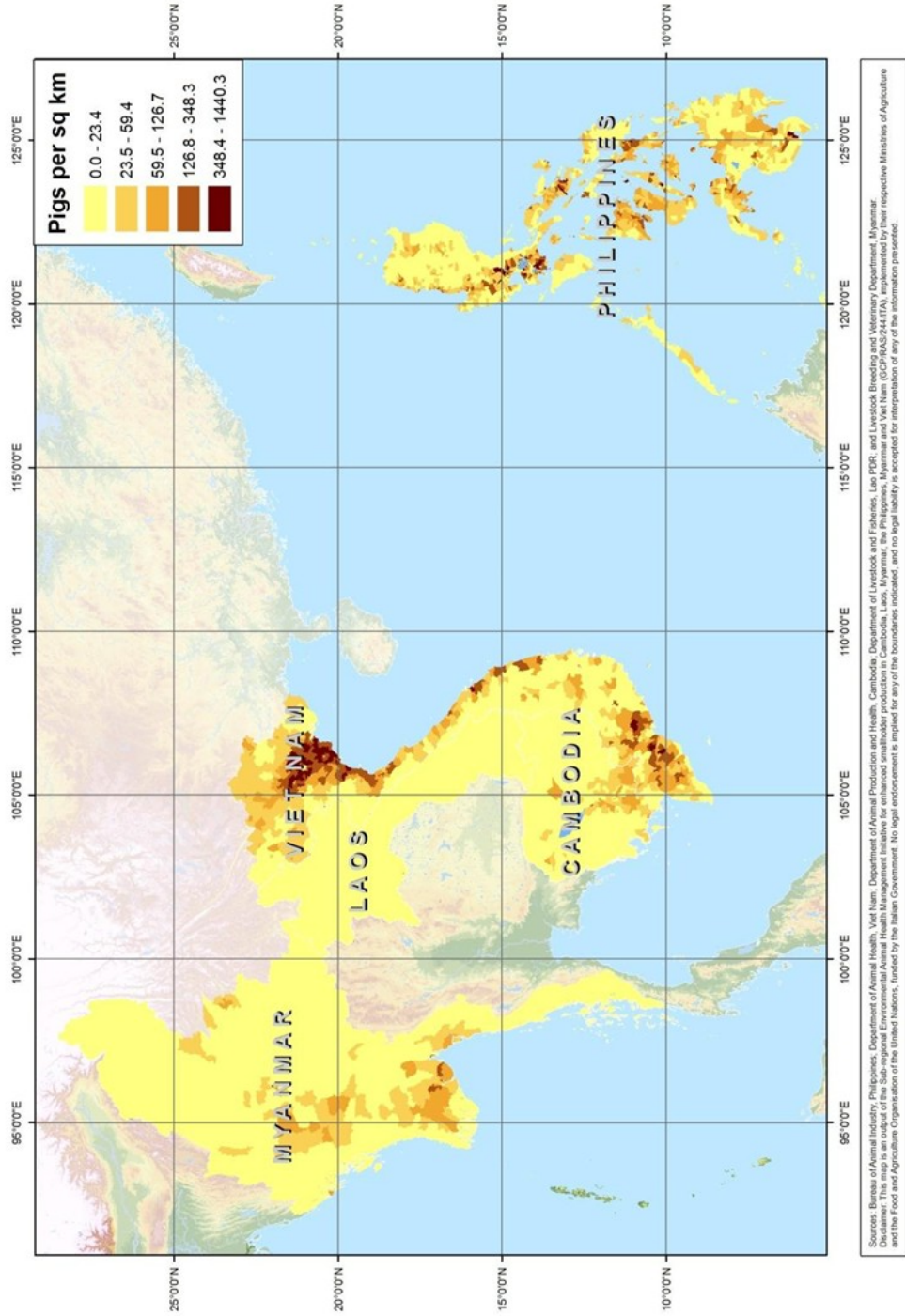
- 1) Capacity to analyze animal disease risk and develop environmental animal health management strategies are fully integrated as core elements in animal production and health services in the Philippines.
- 2) Capacity to analyze animal disease risk and develop and apply strategies on environmental animal health management are further strengthened and applied in selected priority areas in Cambodia and Lao PDR.
- 3) Capacity for database management, analysis and application of GIS to implement environmental animal health management strategies in Myanmar and Vietnam are developed and strengthened.
- 4) Technical/scientific and policy dialogue and network for information exchange and dissemination with the participating countries are established with the Philippines having a coordinating role and the further use of environmental animal health management strategies in animal production and health are thereby promoted.
- 5) National institutions and stakeholders networked and poor livestock keepers empowered and enabled to participate in the policy decision making process of the respective countries.





## EXAMPLES OF EAHM INTERVENTIONS USING GIS OUTPUTS

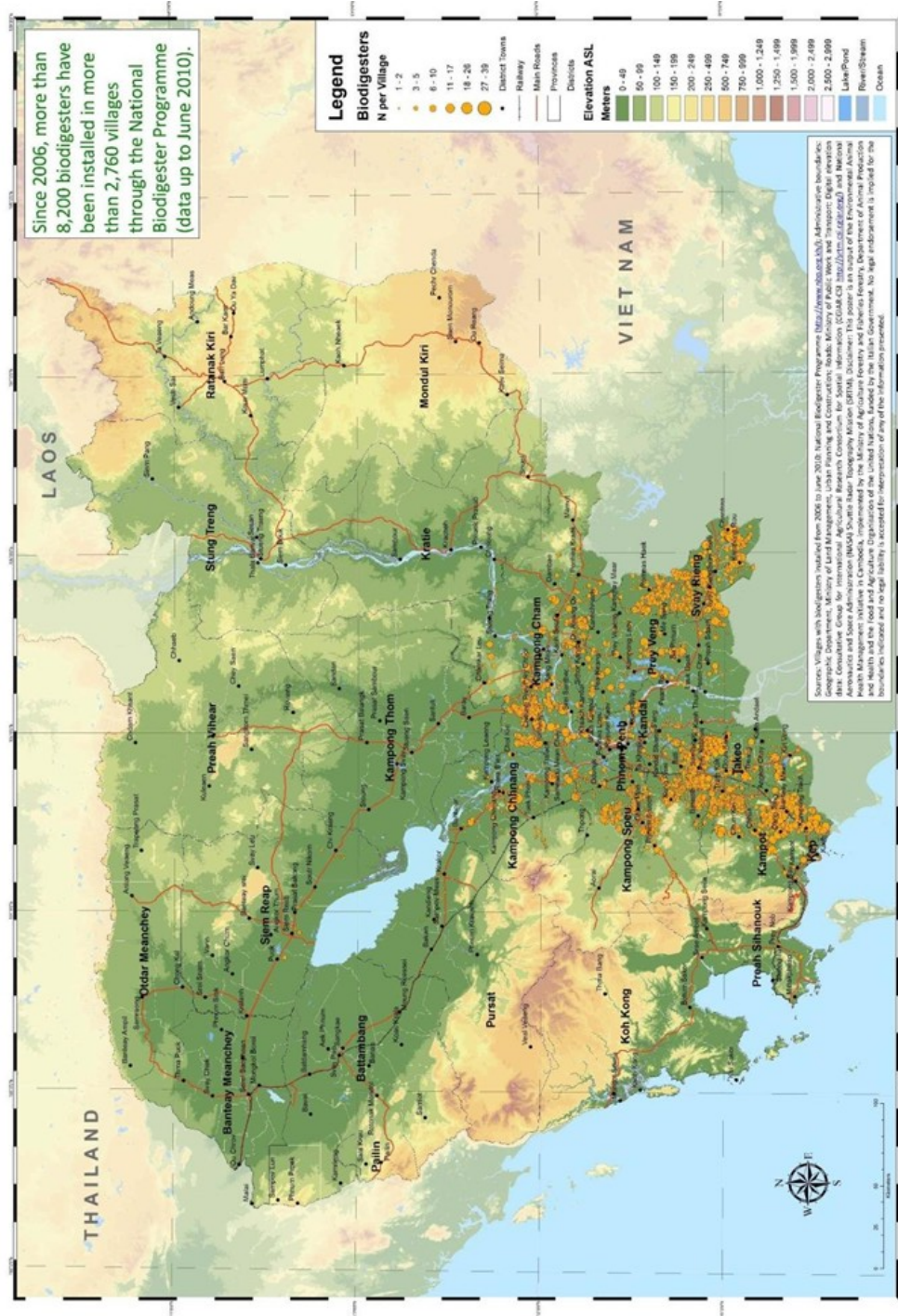
### Comparative Pig Densities in Cambodia, Laos, Myanmar, Philippines and Viet Nam



**Knowing Where Animals are is Important for Planning and Targeting Interventions.** The distribution of pigs differ in detail, but have similar overall patterns, reflecting the general distribution of farmers and farmland.

4

### Cambodia: Distribution of Bio-digesters Established by the National Bio-digester Programme, 2010



**Better Waste Management can be converted to Biogas Production which can Reduce Risk of Diseases.** Through the biogas production, animal manure and other farm/household wastes are transferred regularly into them to generate biogas for cooking and lighting. Aside from these immediate benefits, the process creates more hygienic conditions for animals and people; improves air quality at home; eliminates the need for firewood collection; and reduces disease risk.

5



# Extract from the National Atlas of Philippine Farm Animal Resources: Carabao (Water Buffalo)

National Atlas of Philippine Farm Animal Resources

## Livestock Sector Production

The Philippine livestock sector, comprising the total production of carabao (water buffalo), cattle, swine, goat and dairy, has increased progressively over the past decade and accounted for an estimated 12 percent of the country's total agricultural production in 2010, equivalent to a gross value of PhP211 billion at current prices.

## Carabao

Carabao are kept primarily for draught power and meat, with some limited local milk production.

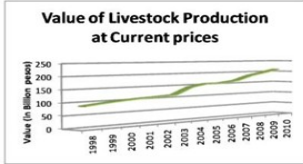
The estimated value of carabao production has increased by some 40% over the past 15 years, at an average rate of 3.0 percent per annum.

The total carabao population in 2010 was 3 million head. Regions VIII, VI and II had the most carabao accounting for 10.6, 10.5 and 10.0 percent of the total population, respectively. The nation's highly urbanized National Capital Region (NCR) and the mountainous Cordillera Administrative Region (CAR) had the fewest carabao.

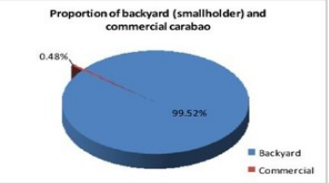
Overall carabao density, nationwide, is 10 head per km<sup>2</sup>, or 10ha per head, but the population is very unevenly distributed and concentrated in lowland agricultural areas. Highest carabao densities, with more than 60 head per km<sup>2</sup> were recorded for municipalities in Region VIII and ARMM, but these were relatively few in number accounting for only 1.5% of the total. Intermediate densities between 30 to 60 head per km<sup>2</sup> and 10 to 30 head per km<sup>2</sup> were found in 7.8 and 36.8 percent of municipalities, respectively. Lowest population densities with less than 10 head per km<sup>2</sup> were found in more than half of all municipalities (53.8 percent) located mainly in more mountainous highland areas. At provincial level, Leyte in Region VIII had the highest carabao density with 30 carabao per km<sup>2</sup>, whilst the island provinces of Tawi-tawi and Sulu in ARMM had only 1 carabao per km<sup>2</sup>.

For the purposes of the 2010 Livestock Population Survey, a commercial livestock farm was defined as any holding with at least 21 adults and zero young; or at least 41 young animals; or at least 10 adults and 22 young. A "backyard" farm was defined as any farm with less than the above. The great majority (99.5 percent) of carabao are kept by smallholders - so called "backyard" farmers; the remaining 0.5 being "commercially" reared. Nationwide, 89.3 percent of municipalities had 100% "backyard" carabao. The average holding was two carabao.

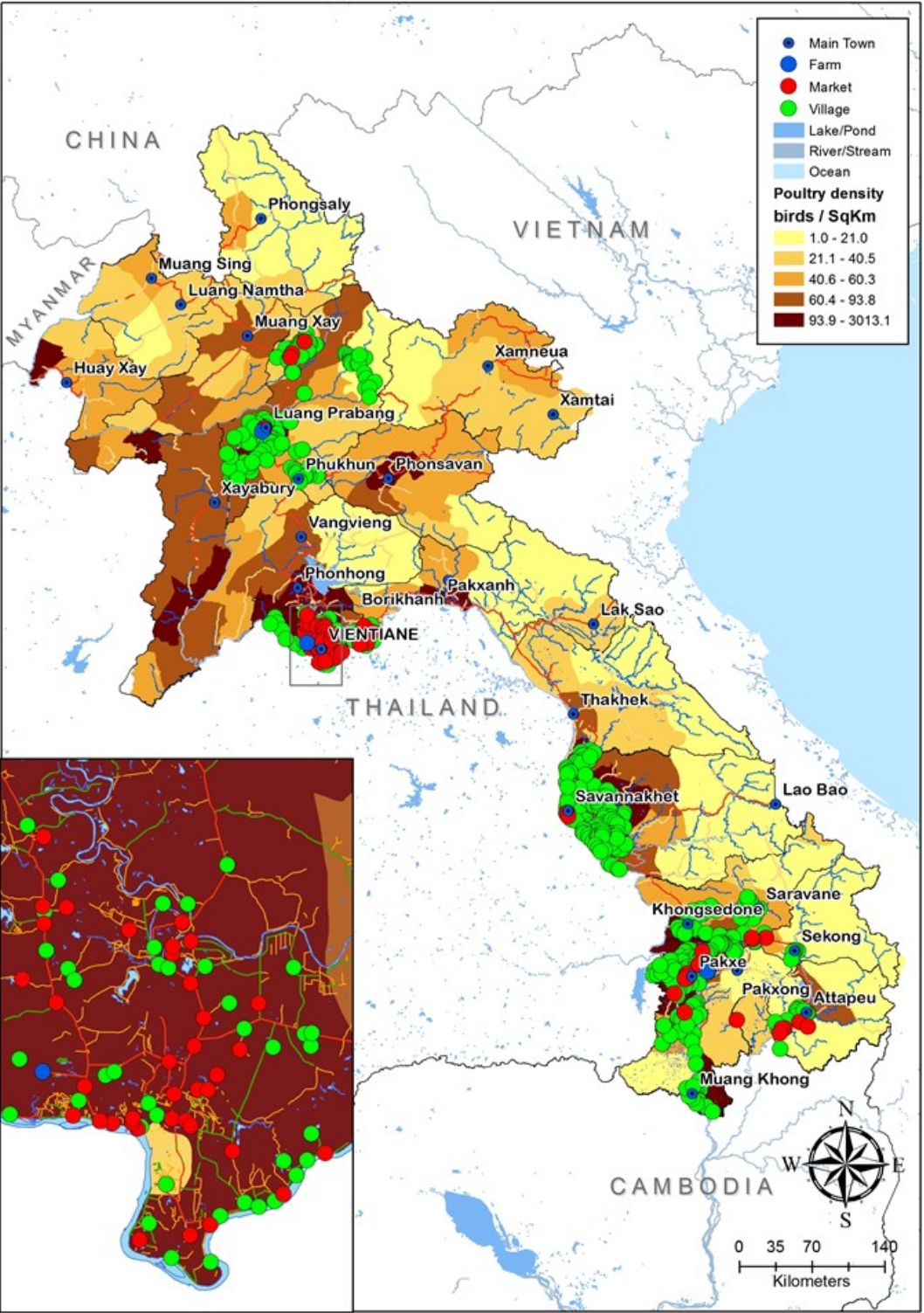
At regional level, the highest proportions of commercially reared carabao were found in Region III, CAR and Region II. At provincial level, the highest proportion were found in Nueva Ecija, Ifugao, Masbate and Cagayan.



Region	Backyard	Commercial	Total
CAR	82,620	1,558	84,178
NCR	85	134	219
Region I	152,717	352	153,069
Region II	296,632	3,893	300,525
Region III	175,535	3,886	179,421
Region IV-A	151,014	899	151,913
Region IV-B	144,209	50	144,259
Region V	238,821	1,225	240,046
Region VI	315,512	306	315,818
Region VII	167,592	473	168,065
Region VIII	316,909	246	317,155
Region IX	160,965	201	161,166
Region X	126,377	549	126,926
Region XI	173,163	131	173,294
Region XII	251,632	314	251,946
Region XIII	86,159	61	86,220
ARMM	151,777	16	151,793
<b>Total</b>	<b>2,991,719</b>	<b>14,294</b>	<b>3,006,013</b>



# Lao PDR: Highly Pathogenic Avian Influenza Active Surveillance Sites, 2007-2009



**Integration of EAHM in national veterinary services.** Maps in GIS formats of water buffaloes and population of other livestock species and facilities were used to develop the Livestock, Poultry and Feed Crop Industry Road Map of the Philippines. Overlay of livestock population densities with existing production areas and facilities will enable strategic decision-making on the upgrading and/or installation of additional livestock facilities such as stock farms, diagnostic laboratories, feed laboratories, abattoirs, dressing plants and post-harvest facilities.

**Knowing Where Diseases Occur is Important for Controlling the Spread of Diseases.** The map above shows the distribution of Highly Pathogenic Avian Influenza (HPAI) outbreaks (2007-2009). The outbreaks are clearly concentrated in areas where there are higher concentrations of chickens like in live bird markets. The presence of these markets is a major risk factor in disease transmission.