



# IAEA

International Atomic Energy Agency

*Atoms for Peace*

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## ***Improving livestock production while conserving the environment in the Asia and Pacific region***

### ***The challenge...***

Livestock farming is important to the Asia and the Pacific region, both for food production, and as a source of income for farmers. However livestock productivity in most countries in the region is not reaching its full potential due to factors that include inadequate feeding, reproduction mismanagement, disease prevalence and a lack of effective support systems.

In addition, farmyard manure is neglected and often allowed to deteriorate on the ground. These manure heaps can cause environmental problems, as they release large quantities of methane and nitrous oxides to the atmosphere as greenhouse gases. The heaps also release free nitrates and phosphorus, which leach into the deeper layers of soil, entering underground water systems and accumulating in inland water bodies. This makes the water unfit for human use.

### ***The project...***

To address the problem of low livestock productivity and the attendant environmental issues, the project focused on identifying livestock farming strategies that would help to decrease emissions of methane and carbon dioxide, and that would retain more nitrogen in the animal. This would lower the amount lost to the environment. The project also concentrated on the conservation of indigenous genetic resources. Assistance was provided through expert missions, workshops and training courses.



*Extraction of rumen fluid for analysis in Thailand.*

### ***The impact...***

- Livestock feeding strategies developed in the region have resulted in increased weight gain and milk production in dairy animals. An increase in milk yields of 23% was observed in Bangladesh and a reported increase in the average daily weight gain of animals ranged from 15 to 70% in Bangladesh, China, Indonesia, Myanmar and the Philippines.
- The reduction of methane emissions due to the adoption of new feeding strategies in Bangladesh, China, Indonesia, Pakistan and Thailand ranged from 15 to 70%.
- Genetic improvements in livestock were achieved in nearly all the participating countries, using different reproductive techniques. Superior offspring have been produced in Mongolia and Sri Lanka.
- The manual 'Development of guidelines for efficient manure management in Asian livestock production' was improved and updated with the results of this and earlier projects.