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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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Unlocking the potential of smallholder livestock production-using managed forages as an entry point

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Key words : managed forage plots , intensification , smallholder livestock production , Southeast Asia

Introduction In Southeast Asia , smallholder farmers operate small , mixed crop-livestock farms . Farmers rely largely on common property feed resources that are heavily over-utilized and are becoming increasingly scarce . Farmers are faced with declining livestock productivity because of an increasing feed gap . They have little control over the use of common property feed resources and find that they need to spend more and more time herding and feeding their animals . Livestock production based on common-property feed resources is fast becoming a less and less attractive farm enterprise .

Managed forage plots-the first step towards more productive livestock production Smallholder farmers in many countries in Southeast Asia have found that they can double the returns from livestock production if they complement the use of common-property feed resources with small areas of fodder grown on their own farm . At first farmers find that it is convenient to grow feed as it reduces the time needed for feeding animals . Soon , however , they see opportunities for using this new feed resource to improve and intensify livestock production . Managed forages are the key to enabling this transition . Farmers are growing small areas (1000-3000 m²) of well-managed grass plots . These are almost exclusively utilized by a cut-and-carry system rather than grazed , and farmers apply manure and inorganic fertilizer to forage areas to ensure high productivity . In some areas , farmers have gone to the extent of irrigating their forage areas . In most areas , farmers grow forages in plots but there are also areas where farmers grow forages as contour hedges (e.g . Philippines) or under tree plantations (e.g . Indonesia and PR China) . The main species used are the grasses *Panicum maximum* Simuang , *Brachiaria humidicola* Tully and Yanero , *Brachiaria* hybrid Mulato and Mulato II , *Brachiaria brizantha* Marandu , *Paspalum atratum* Terenos , *Setaria sphacelata* Lampung and *Pennisetum* hybrid King grass and the legume *Stylosanthes guianensis* Stylo184 . The reason why farmers grow mainly grasses is that these have a much higher yield than legumes and quantity of feed (rather than quality) is the primary concern of farmers .

One of the most common uses of managed forages is fattening or conditioning of cattle before sale . Farmers put cattle destined for sale into a pen and feed them with managed forages for 1-3 month before selling the animals . Fattening cattle in this way increases the sale value by US\$ 1-2 per day of fattening ; a considerable income for smallholder farmers in Southeast Asia . The area required to do this is about 1000m² per animal fattened . Other uses of managed forages include cow-calf production , herbivorous fish production (e.g . use of *Panicum maximum* Simuang in Vietnam) , sale of fresh forage (e.g . Thailand) , sale of seed and vegetative propagation material , village pigs production (e.g . use of *Stylosanthes guianensis* Stylo 184 in Lao PDR) , and draught cattle (e.g . Cambodia) .

Adoption of managed forages By 2005 , more than 15 ,000 smallholder farmers had adopted managed forages as part of their livestock production system in Southeast Asia (Stür *et al.* 2007) . While many farmers were using both managed forages and common-property resources , some had moved to much more intensive livestock production systems that relied only on managed forages . Almost all farmers changed their production system from extensive to a partially intensive system (e.g . fattening cattle) or fully intensive system keeping all cattle confined in pens .

Lessons learnt The planting of managed forages is an entry point to more intensive and profitable livestock production as it provides farmers with an additional feed resource they can control . Successful introduction of managed forages depended on several key factors , including (1) livestock has to be an important component of the livelihood system of farmers , (2) farmers must recognize the lack of feed as a major problem , (3) participatory approaches to actively engage with farmer groups , and (4) availability of suitable , well-adapted forage varieties .

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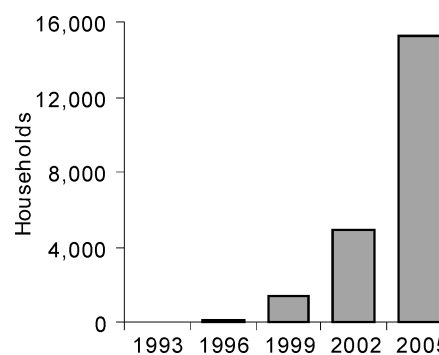


Figure 1 Adoption of managed forage plots in Southeast Asia , 1993-2005 .