

Sustainable Use of Mountain Resources

Survival in this remote, mountainous region required villagers to be resourceful with the natural materials they found and to use them in renewable, sustainable ways.

As rice was difficult to cultivate in the area, plants that could be used in place of rice straw for crafts and construction were especially important. One such plant was Japanese witch hazel, a shrub native to mountainous areas of Japan. Young branches were cut from the main shrub and twisted into a flexible binding material called *neso*. *Neso* was used to lash together many of the beams that form *gasshō*-style roofs, reducing the need for the straw rope that was used in other parts of the country.

Another essential plant was miscanthus grass, which was used to thatch the roofs. Two species were used: *susuki* (*Miscanthus sinensis*) and *kariyasu* (*Miscanthus tinctorius*). The latter was favored for its thinner, hollow stems, which could be bundled more tightly. The resulting thatch absorbed less water and dried more quickly after rain or snow, making the roof last longer. As *kariyasu* fields have now largely been overtaken by the faster-growing *susuki*, roofs must be rethatched more frequently than they once were.

Traditionally, *kariyasu* fields were located along the Shō River, on the hillsides of the river valley, and each family tended its own field. The harvest lasted from late October to the end of November, before the start of the snowy season. Local records show that a single family of four reaped about 30 bundles of miscanthus in a week (a “bundle” being the number of reeds that could be bound with a 3.6-meter rope), and that the family’s roof required some 260 bundles to rethatch. The yearly harvest was therefore a race to collect enough thatch before the snow began to fall.

When it came to heating homes in the winter, oak wood was the favored fuel because its flames burned hot but were easy to manage. This was important in *gasshō*-style homes, which are extremely flammable due to their wood-and-thatch construction. Oak trees also regrow relatively quickly, ensuring a steady fuel supply.

Renewability was a key feature of these natural materials. In a practice called coppicing, trees harvested for firewood were left with a sizeable stump that soon sprouted new shoots. Witch hazel branches (*neso*) were also cut so that they would regrow quickly. *Kariyasu* fields were carefully managed to produce a healthy harvest each year and to ensure they would not be overtaken by *susuki*. By using resources from nature sustainably, villagers in Shirakawa-gō were able to maintain their way of life in this rugged, isolated environment for centuries.