

#### **V.A.4. A Biophysical Analysis of Energy Flows in Different Agro-eco-systems of Garhwal Himalaya**

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The present study deals with the material input, labour and energy flows of village ecosystem in Garhwal Himalaya. The annual net energy contribution to the village ecosystem was ranged between 5478 to 11366 GJ from crops, 3484 to 11940 GJ from forest and 2328 to 3738 GJ from the market per village. The net gain of energy from the system to human being was 2931 GJ to 13263 GJ and to livestock 7896 GJ to 10321 GJ per year per village. In general, forest provided the maximum support among all the components of the village ecosystem whereas crop proved the second major energy source in the hill farming ecosystem. Energetic of the agro-ecosystems indicated that the most efficient crops were soybean, wheat and march sown pea in high-hill, soyabean, rice, barnyard millet, french bean, wheat, barely and pulses in mid-hill and rice, bamyad millet, wheat, barely, rapeseed and mustard in valley farming systems. Wheat , rice, soyabean and barnyard millet based crop rotations proved economically viable and energy output-input efficient agro-economics. some space for those (fauna) who choose to stay over. The key to sustainable development lies in the way the above issues are tacked, so as to maintain ecological balance while undertaking any construction.