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| **WP3.** Molecular dentification of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp, *Theileria* spp in host (cattle, buffaloes, goats, and horses) and in vectors (ticks and flies); and molecular identification of vector species. | - NGS sequencing of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp, *Theileria* spp in vectors (Ticks and flies).  - Molecular identification of ticks and flies |
| ***WP5.1. Prevalence mapping of Trypanosoma spp, Anaplasma spp, Babesia spp and Theileria spp; Mapping of host distribution and vector distribution*** | - Prevalence mapping of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp.  - Mapping of hosts (Cattle, buffalo, goat, horse) distribution of each genus of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp. |
| ***WP5.2. Prevalence mapping of Trypanosoma spp, Anaplasma spp, Babesia spp và Theileria spp; Mapping of host distribution of Trypanosoma spp, Anaplasma spp, Babesia spp và Theileria spp by province and by season.***  ***(One set of mappings by each commune where samples collected as you did, and one set full color for all province)*** | - Prevalence mapping of each genus of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp và *Theileria* spp in each PROVINCE and each SEASON.  - Mapping of host (Cattle, buffalo, goat, horse) distribution of each genus of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp in each province, and in each season. |
| **WP 6. Predict mapping of climate change on epidemiological changing of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp in Northern Vietnam.** | - Predict mapping of pathogens movement of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp in climate changing condition of Northern Vietnam by 2050; and by 2070. |
| **WP 7.1. Epidemiology mappings to predict buffers and a basic spatial query of each genus of *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp for each province (and one set for three provinces)** |  |
| **WP 7.2. Epidemiology mappings to predict buffers and a basic spatial query ofeach genusof *Trypanosoma* spp, *Anaplasma* spp, *Babesia* spp and *Theileria* spp in each season.** |  |