LAND CLASSIFICATION SURVEY

NAM KUEUNG AND BAN HOUEI OR AREAS

BAN HOUEI SAI, LAOS

I. Location

Nam Kueung area lies within the coordinates: 5049 IV, 2660: 2763 and 2859:2962. The Nam Kueung forms the approximate boundary on the east, and high mountainous ridge forms the western boundary.

Ban Houei Or area lies within the big bend of the Mekong river, adjacent to and across the river from Chiang Saen, Thailand. Coordinates: 5049 IV, 1441:1353 and 2341:2953.

II. Purpose

At the request of the Agriculture Advisor at Ban Houei Sai, a reconnaissance land classification study was made on the areas. The topographic map seale 1:50,000, sheet 5049 IV was used to delineat the several land catgories. The purpose of this survey was to determine the kind and extent of lands that would be suitable for agricultural development.

III. Topography

The areas studied, range in elevation from 360 meters to 460 meter above mean sea level. The low grasslands are gently sloping to nearly flat in general gradient, while the river levees and forested lands are gently undulating. The lands higher than 400 meters in elevation have undulating to rolling topography, ranging from 5 to 15 percent slopes.

IV. Soils

The area colored brown on the attached map is a more important upland soil. These were deposited by Nam Kueung and Mekong river in the form of levees. This soil has a silt loam topsoil 20 cm. (8 inches) thick. This is underlain by a silty clay loam subsoil to depth 150 cm. (5 feet) or more. This soil is slightly acid and has good moisture and nutrient holding capacity. The productivity of this soil is good even without the addition of fertilizer, except when it has been continously cultivated for a long period of time. The main limitation is insufficient moisture during the dry season or flood hazard during the wet season.

The purple areas represent soils of moderate suitability for upland crops. These areas are subject to leaching action of the monsoon rains over a long period of time. Typically the soil in these areas has a silt loam topsoil and silty clay loam subsoil. Fair to good moisture and nutrient holding capacity. The prineiple limitation is the undulating to rolling topography.

The lands recommended for wetland rice appear in yellow color on the attached map. The soil in these areas developed in alluvial material under a wet or flooded environment. Typically this soil has a medium textured, moderately permeable, fine sandy loam to loam topsoil 30 cm. (12 inches) thick. Beneath the subsoil is a dense clay barrier. All of the wetland rice soil is a strongly acid in reaction. Because of lack of surface drainage outlet, this problem may be improved by supplying drainage outlet channels and by the use of lime to neutralize the low pH.

V. Surface drainage

Nam Kueung area has a major stream drainage on the east, and minor stream drainages on the north and south. Therefore the surface drainage in this area is fair to good.

Ban Houei Or area has good surface drainage on the upland areas, but in the wetland rice areas, the surface drainage is poor. Especially the flat low grasslands may require some minor surface drainage outlet construction to facilitate harvest of rice crop, and which may also tend to modify the acid condition of soils in these areas.

VI. Conclusions

Observations of the soils, topography and vegetative conditions indicate that the areas are suitable for agricultural development, if provided with reasonably good cultural practices.

VII. Recommendations.

Some paddy dikes will be required to provide better control over water levels on the potential wetland rice areas. Some surface drainage channels will be needed to remove excess water during the wet season and provide for the removal of stagnate water during the dry season. The areas presently in native grass, that have potential as wetland rice areas, will probably require plowing with mechanical equipment to put them in production this coming year. The dense root system developed on these areas would be difficult to destroy with the traditional water buffalo and plow.

On those upland areas recommended for diversified crops the slopes range from 1 to 5 % . These areas can be developed with mechanical equipment but cultural practices, such as crop rotation and fertilization, will be required for sustained production. If these practices are not implemented the plant nutrients in the surface soil are rapidly depleted and only deep rooted tree crops will survive and produce.

On those areas exceeding 5% slope mechanical equipment is not recommended because soil disturbance and destruction is, as a rule, excessive. These areas can be hand cleared for short term slash and burn culture, hand planted or hand seeded to long term forage species for livestock production, or planted to deep rooted tree crops to produce fruits, nuts or fiber.

Enclosure: Map

AGR:Sunthorn Hemwongse:cn:1/17/73

cc: AGR/VTE-7
AGR/BHS-5
CDAA/BHS-1
AC/BHS-1
ORA/BHS-2
J.Gillespic/BHS-1
ORA/VTE-3

LAND CLASSIFICATION MAP

NAM KUEUNG AND BAN HOUEI OR AREA

BAN HOUEI SAI, LAOS

SCALE 1:50,000

LOCATION: SHEET 5049 IV

N

1,000m. 0 1,000m.

BROWN 1,645 Hectares

Recommended for either upland crops or wetland rice. Land use is usually dependent upon position and / or topography. These soils are deep, medium to moderately fine textured river levee soils with good water holding capacity. The inherent fertility of this soil is fair to good. The principle limitation is flood hazard during the wet season.

PURPLE 2,832 Hectares

Soils with moderate suitability for upland crops. Fair to good moisture holding capacity is a feature of the silt loam topsoil and silty clay loam subsoil. Inherent fertility is fair. The principle limitation is the undulating to rolling topography.

YELLOW 4,470 Hectares

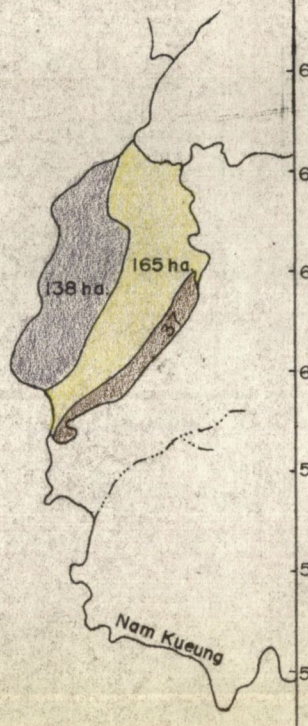
Fine sandy loam to loam topsoil with a clay barrier in the subsoil suitable for wetland rice. Level to gently undulating topography. The principle limitation is a lack of surface drainage outlet.

RED 3,106 Hectares

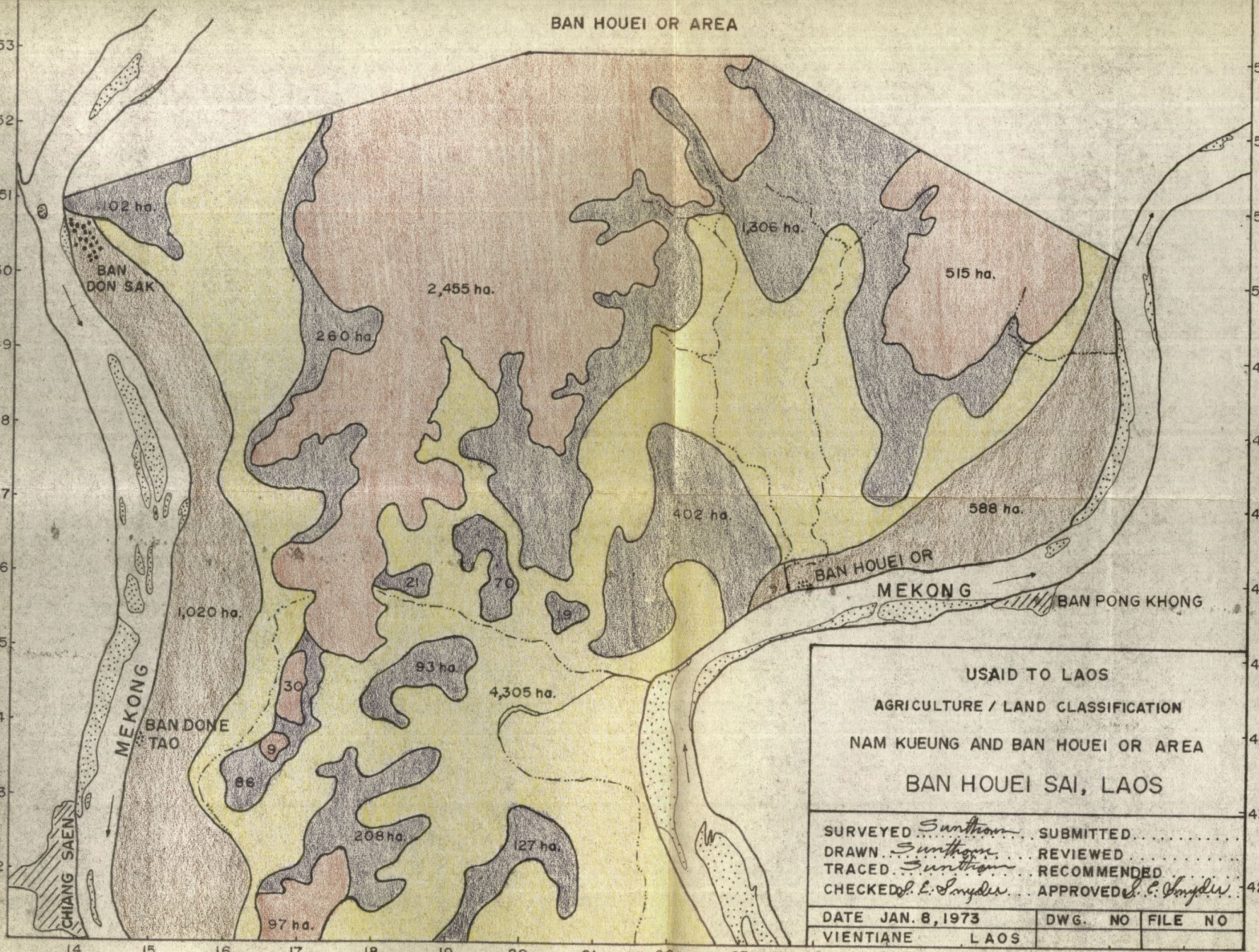
Rock outcrop and / or steep slopes. Not recommended for agricultural development.

TOTAL AREA 12,053 HECTARES

NAM KUEUNG AREA



BAN HOUEI OR AREA



USAID TO LAOS

AGRICULTURE / LAND CLASSIFICATION

NAM KUEUNG AND BAN HOUEI OR AREA

BAN HOUEI SAI, LAOS

SURVEYED Sunthorn	SUBMITTED		
DRAWN Sunthorn	REVIEWED		
TRACED Sunthorn	RECOMMENDED		
CHECKED L. E. Snyder	APPROVED L. E. Snyder		
DATE JAN. 8, 1973		DWG. NO	FILE NO
VIENTIANE LAOS			