

1965

Report on survey of land and water resources: Afghanistan, v.1-v.4, Maps

Food and Agriculture Organization of the United Nations, United Nations Special Fund

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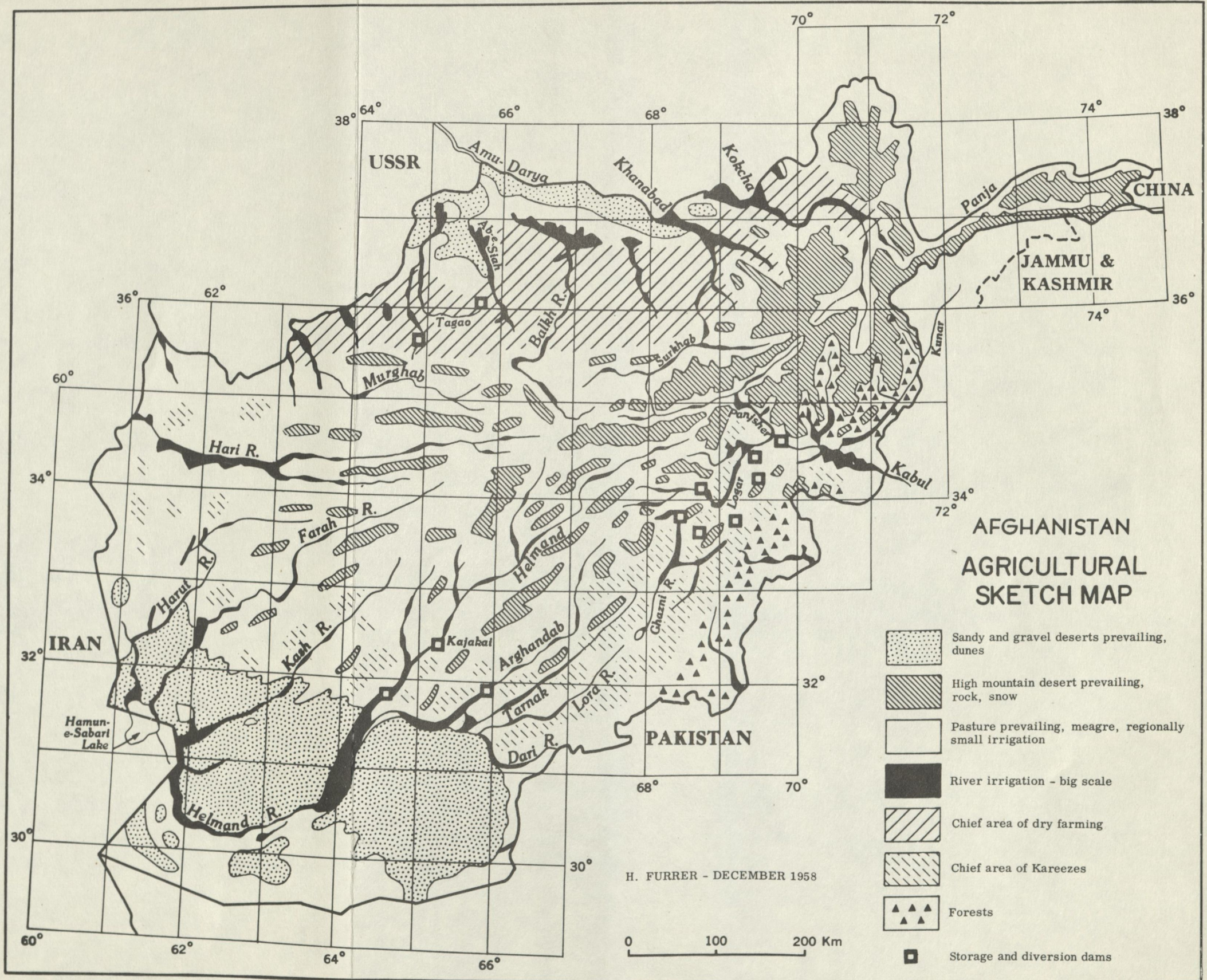
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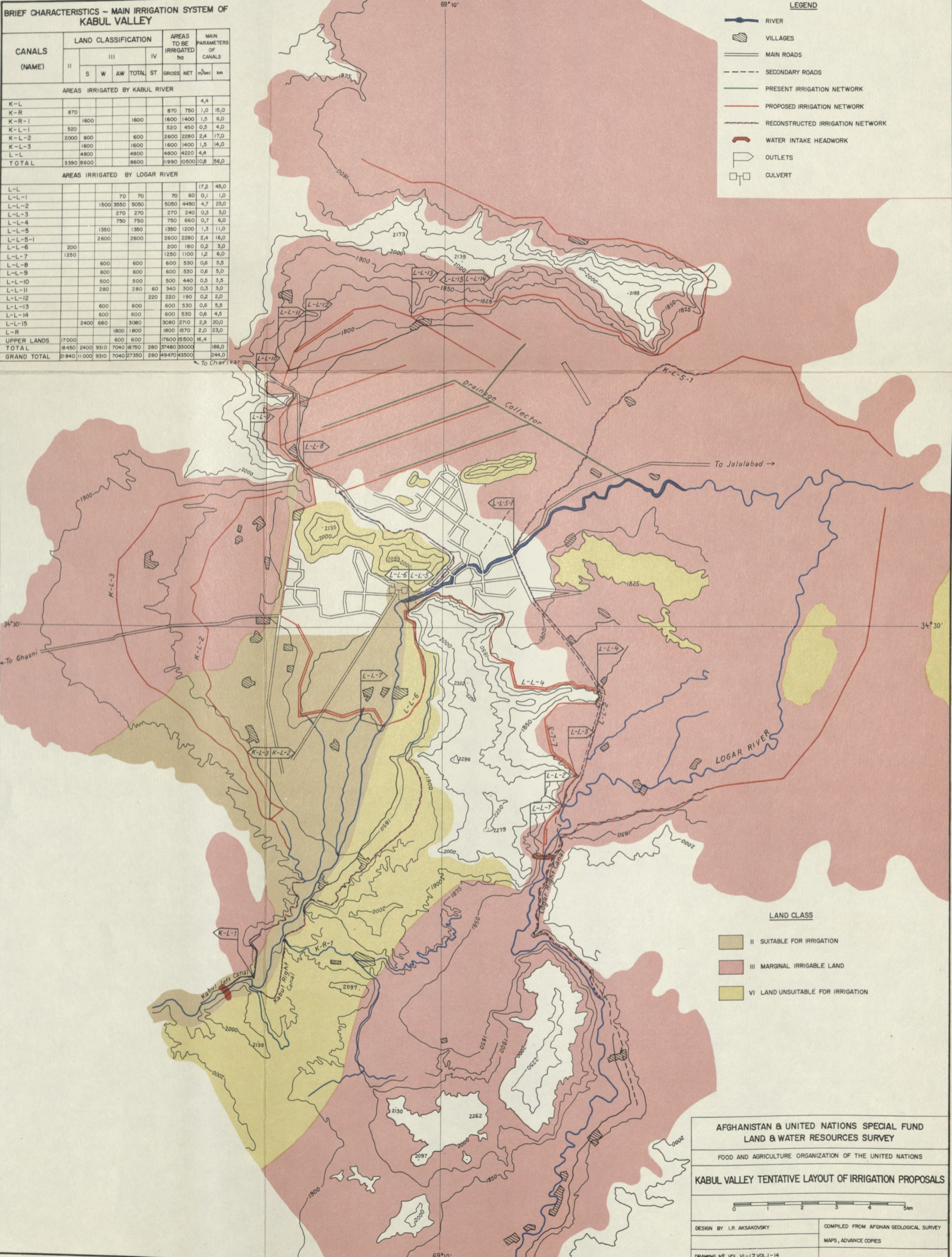


BRIEF CHARACTERISTICS - MAIN IRRIGATION SYSTEM OF KABUL VALLEY

CANALS (NAME)	LAND CLASSIFICATION					AREAS TO BE IRRIGATED ha		MAIN PARAMETERS OF CANALS	
	III			IV		GROSS	NET	m ³ /sec	km
	S	W	AW	TOTAL	ST				
AREAS IRRIGATED BY KABUL RIVER									
K-L	870					870	750	1,0	15,0
K-R		1600		1600		1600	1400	1,5	6,0
K-L-1	520					520	450	0,5	4,0
K-L-2	2000	600		600		2600	2280	2,4	17,0
K-L-3	1800			1800		1800	1400	1,5	14,0
L-L	3390	8600		8600		11990	10500	10,8	56,0
AREAS IRRIGATED BY LOGAR RIVER									
L-L			70	70		70	60	0,1	1,0
L-L-1		1500	3550	5050		5050	4450	4,7	25,0
L-L-2			270	270		270	240	0,3	3,0
L-L-3			750	750		750	660	0,7	6,0
L-L-4		1350		1350		1350	1200	1,3	11,0
L-L-5		2600		2600		2600	2280	2,4	16,0
L-L-5-1	200					200	180	0,2	3,0
L-L-6	1250					1250	1100	1,2	6,0
L-L-7		600		600		600	530	0,6	5,5
L-L-8		600		600		600	530	0,6	5,0
L-L-9		500		500		500	440	0,5	3,5
L-L-10		280		280	60	340	300	0,3	3,0
L-L-11					220	220	190	0,2	2,0
L-L-12		600		600		600	530	0,6	5,5
L-L-13		600		600		600	530	0,6	4,5
L-L-14		2400	680	3080		3080	2710	2,9	20,0
L-L-15			1800	1800		1800	1570	2,0	23,0
L-R									
UPPER LANDS	17000			600		17600	15500	16,4	
TOTAL	18450	2400	9310	7040	280	37480	33000	188,0	
GRAND TOTAL	21840	11000	9310	7040	27350	49470	43500	244,0	

LEGEND

- RIVER
- VILLAGES
- MAIN ROADS
- SECONDARY ROADS
- PRESENT IRRIGATION NETWORK
- PROPOSED IRRIGATION NETWORK
- RECONSTRUCTED IRRIGATION NETWORK
- WATER INTAKE HEADWORK
- OUTLETS
- CULVERT



LAND CLASS

- II SUITABLE FOR IRRIGATION
- III MARGINAL IRRIGABLE LAND
- VI LAND UNSUITABLE FOR IRRIGATION

AFGHANISTAN & UNITED NATIONS SPECIAL FUND
 LAND & WATER RESOURCES SURVEY

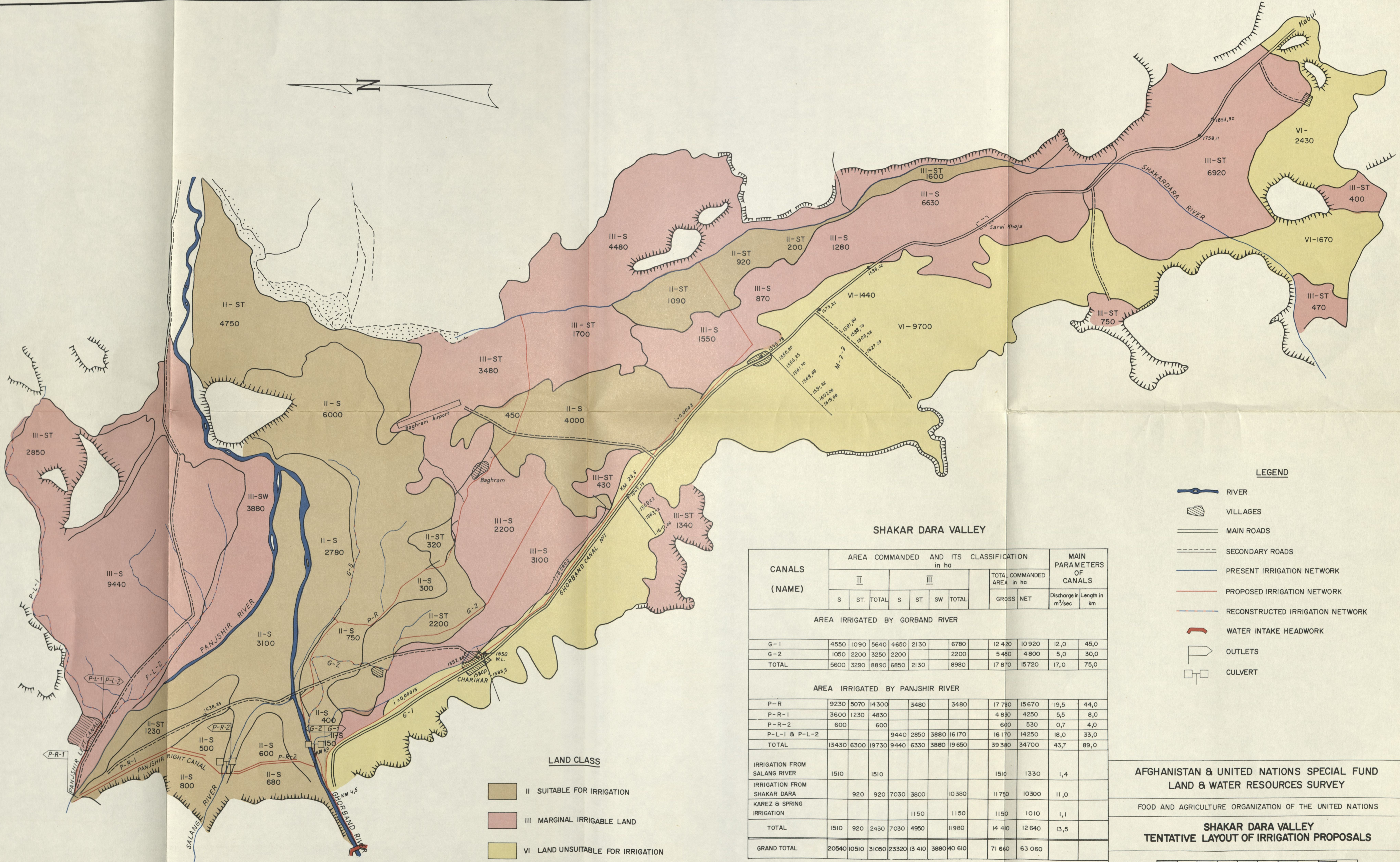
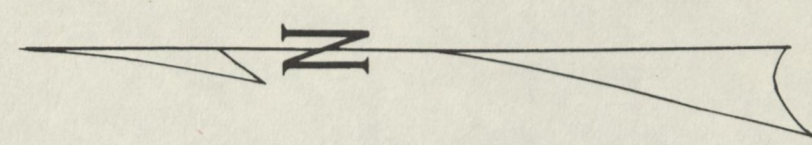
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

KABUL VALLEY TENTATIVE LAYOUT OF IRRIGATION PROPOSALS

0 1 2 3 4 5 km

DESIGN BY I.P. AKSAKOVSKY
 COMPILED FROM AFGHAN GEOLOGICAL SURVEY
 MAPS, ADVANCE COPIES

DRAWING NO. VOL. VI-17, VOL. I-14



- LAND CLASS**
- II SUITABLE FOR IRRIGATION
 - III MARGINAL IRRIGABLE LAND
 - VI LAND UNSUITABLE FOR IRRIGATION

SHAKAR DARA VALLEY

CANALS (NAME)	AREA COMMANDED AND ITS CLASSIFICATION in ha								MAIN PARAMETERS OF CANALS			
	II			III			TOTAL COMMANDED AREA in ha		Discharge in m ³ /sec	Length in km		
	S	ST	TOTAL	S	ST	SW	TOTAL	GROSS				
AREA IRRIGATED BY GORBAND RIVER												
G-1	4550	1090	5640	4650	2130		6780	12 420	10 920	12,0	45,0	
G-2	1050	2200	3250	2200			2200	5 460	4 800	5,0	30,0	
TOTAL	5600	3290	8890	6850	2130		8980	17 870	15 720	17,0	75,0	
AREA IRRIGATED BY PANJSHIR RIVER												
P-R	9230	5070	14300		3480		3480	17 780	15 670	19,5	44,0	
P-R-1	3600	1230	4830					4 830	4 250	5,5	8,0	
P-R-2	600		600					600	530	0,7	4,0	
P-L-1 & P-L-2				9440	2850	3880	16170	16 170	14 250	18,0	33,0	
TOTAL	13430	6300	19730	9440	6330	3880	19 650	39 380	34 700	43,7	89,0	
IRRIGATION FROM SALANG RIVER	1510		1510					1510	1330	1,4		
IRRIGATION FROM SHAKAR DARA KAREZ & SPRING IRRIGATION	920	920	7030	3800			10 380	11 750	10 300	11,0		
TOTAL	1510	920	2430	7030	4950		11 980	14 410	12 640	13,5		
GRAND TOTAL	20540	10510	31050	23320	13 410	3880	40 610	71 660	63 060			

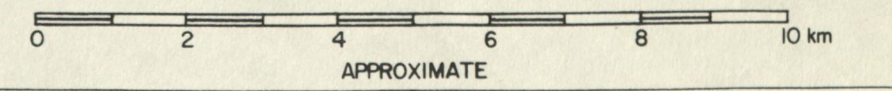
LEGEND

- RIVER
- VILLAGES
- MAIN ROADS
- SECONDARY ROADS
- PRESENT IRRIGATION NETWORK
- PROPOSED IRRIGATION NETWORK
- RECONSTRUCTED IRRIGATION NETWORK
- WATER INTAKE HEADWORK
- OUTLETS
- CULVERT

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

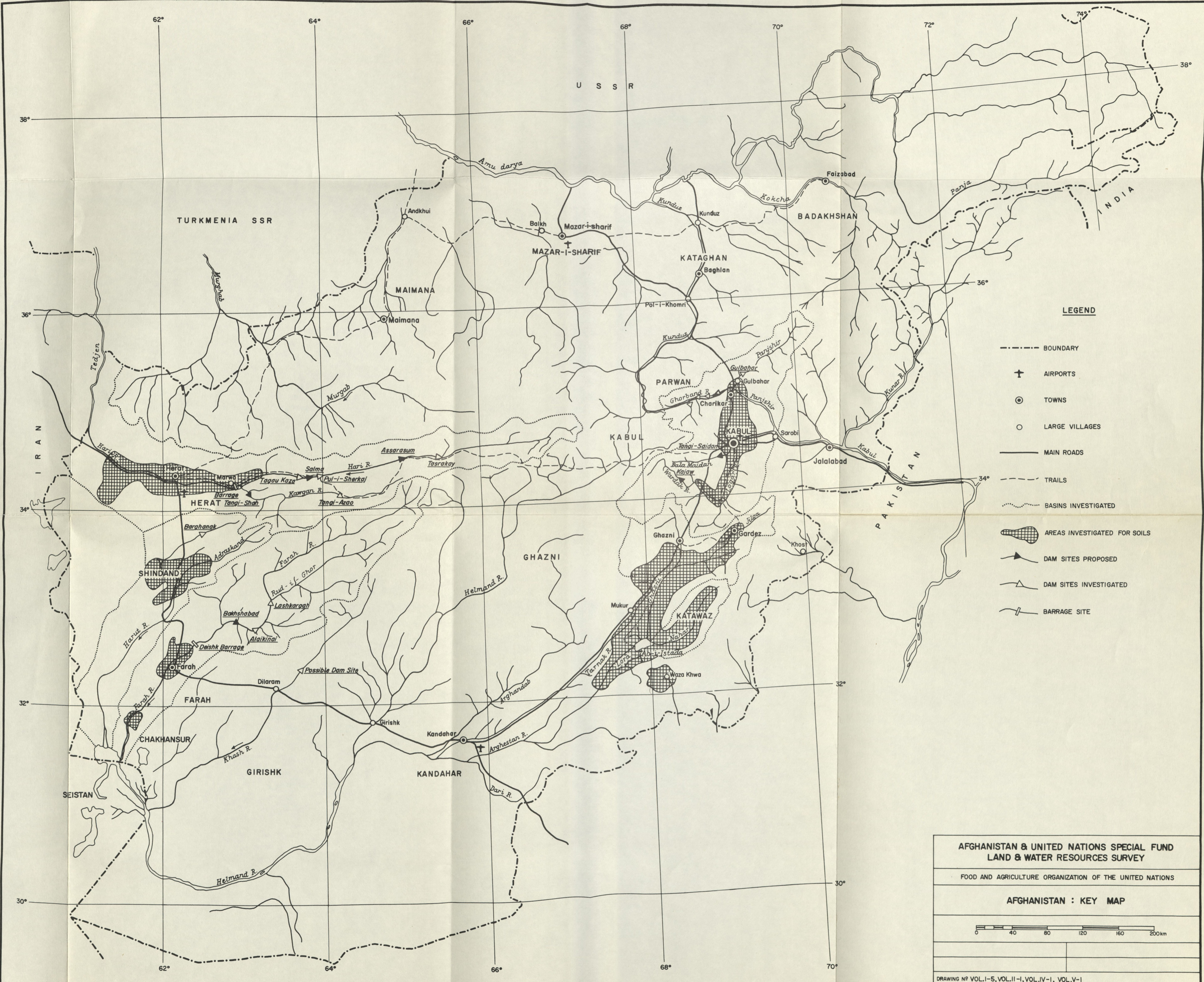
**SHAKAR DARA VALLEY
TENTATIVE LAYOUT OF IRRIGATION PROPOSALS**



DESIGN BY I. P. AKSAKOVSKY COMPILED FROM UNCONTROLLED AIR PHOTO-

GRAPHS

DRAWING N^o VOL. VI-18, VOL. I-13



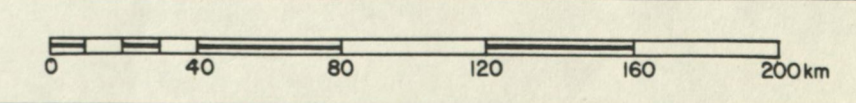
LEGEND

- BOUNDARY
- ✈ AIRPORTS
- ⊙ TOWNS
- LARGE VILLAGES
- MAIN ROADS
- - - TRAILS
- ⋯ BASINS INVESTIGATED
- ▨ AREAS INVESTIGATED FOR SOILS
- ▲ DAM SITES PROPOSED
- △ DAM SITES INVESTIGATED
- ⊥ BARRAGE SITE

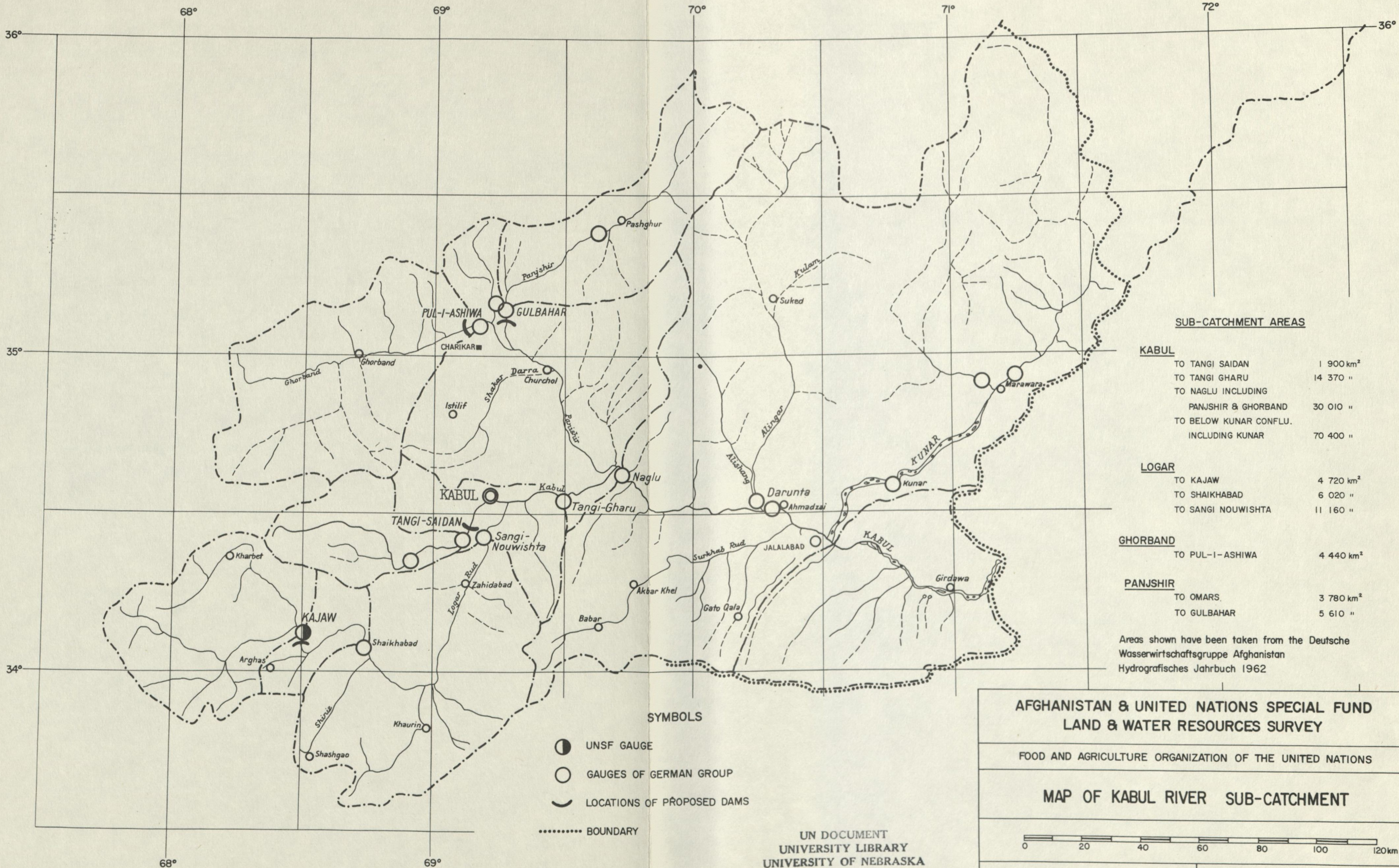
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AFGHANISTAN : KEY MAP



DRAWING N° VOL.I-5, VOL.II-1, VOL.IV-1, VOL.V-1



SUB-CATCHMENT AREAS

KABUL	
TO TANGI SAIDAN	1 900 km ²
TO TANGI GHARU	14 370 "
TO NAGLU INCLUDING PANJSHIR & GHORBAND	30 010 "
TO BELOW KUNAR CONFLU. INCLUDING KUNAR	70 400 "
LOGAR	
TO KAJAW	4 720 km ²
TO SHAIKHABAD	6 020 "
TO SANGI NOUWISHTA	11 160 "
GHORBAND	
TO PUL-I-ASHIWA	4 440 km ²
PANJSHIR	
TO OMARS	3 780 km ²
TO GULBAHAR	5 610 "

Areas shown have been taken from the Deutsche Wasserwirtschaftsgruppe Afghanistan Hydrografisches Jahrbuch 1962

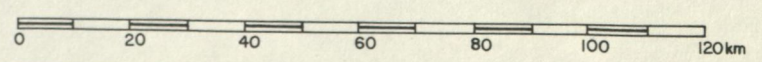
SYMBOLS

- UNSF GAUGE
- GAUGES OF GERMAN GROUP
- LOCATIONS OF PROPOSED DAMS
- BOUNDARY

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

MAP OF KABUL RIVER SUB-CATCHMENT

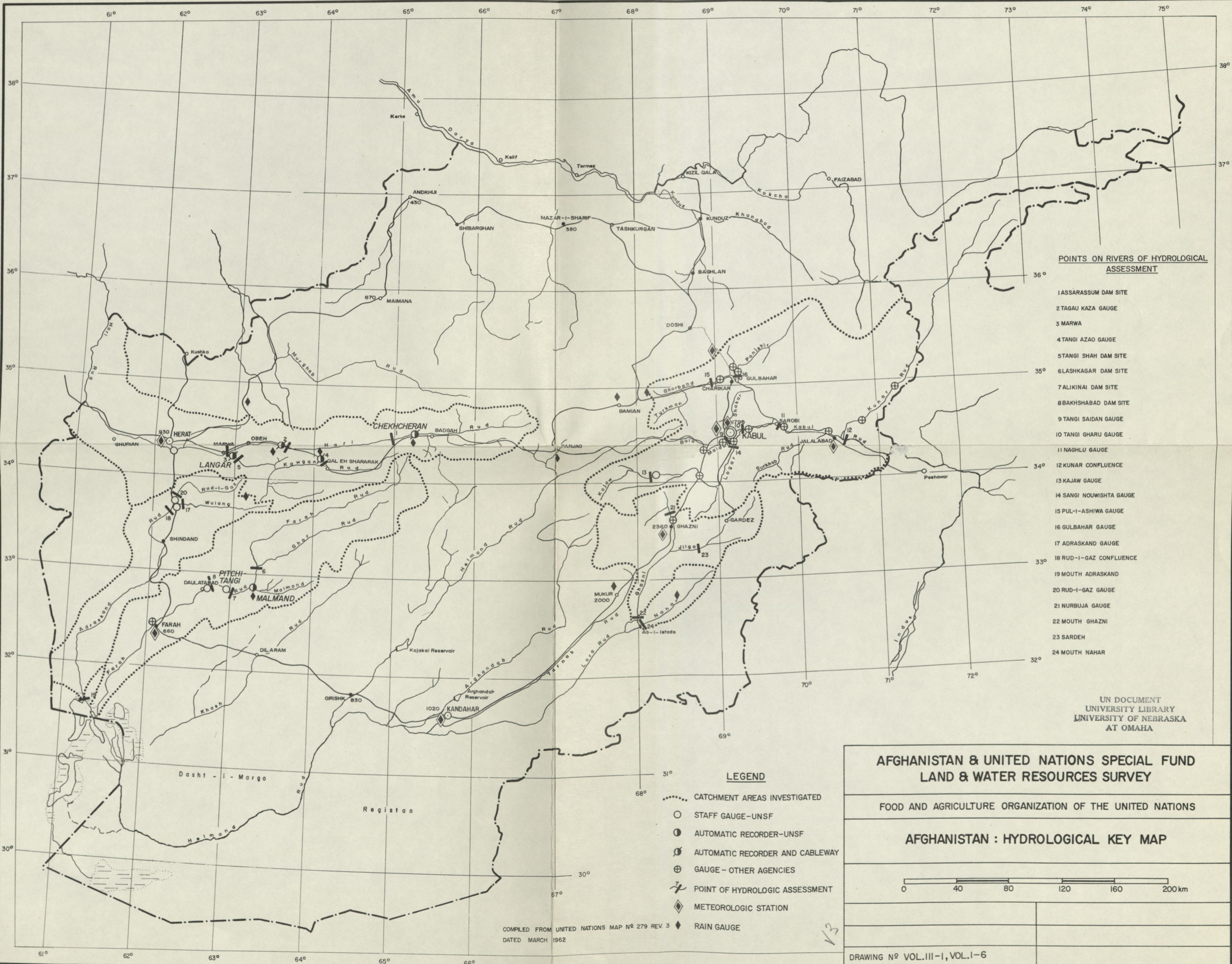


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POINTS ON RIVERS OF HYDROLOGICAL ASSESSMENT

- 1 ASSARASSUM DAM SITE
- 2 TAGAU KAZA GAUGE
- 3 MARWA
- 4 TANGI AZAO GAUGE
- 5 TANGI SHAH DAM SITE
- 6 LASHKAGAR DAM SITE
- 7 ALIKINAI DAM SITE
- 8 BAKHSHABAD DAM SITE
- 9 TANGI SAIDAN GAUGE
- 10 TANGI GHARU GAUGE
- 11 NAGHLU GAUGE
- 12 KUNAR CONFLUENCE
- 13 KAJAW GAUGE
- 14 SANGI NOUWISHTA GAUGE
- 15 PUL-I-ASHIWA GAUGE
- 16 GULBAHAR GAUGE
- 17 ADRASKAND GAUGE
- 18 RUD-I-GAZ CONFLUENCE
- 19 MOUTH ADRASKAND
- 20 RUD-I-GAZ GAUGE
- 21 NURBUJA GAUGE
- 22 MOUTH GHAZNI
- 23 SARDEH
- 24 MOUTH NAHAR

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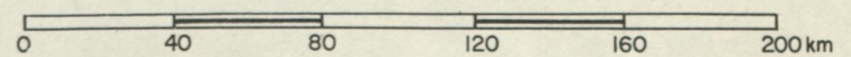
LEGEND

- CATCHMENT AREAS INVESTIGATED
- STAFF GAUGE-UNSF
- AUTOMATIC RECORDER-UNSF
- ⊕ AUTOMATIC RECORDER AND CABLEWAY
- ⊕ GAUGE - OTHER AGENCIES
- ⊗ POINT OF HYDROLOGIC ASSESSMENT
- ◆ METEOROLOGIC STATION
- ◆ RAIN GAUGE

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AFGHANISTAN : HYDROLOGICAL KEY MAP



COMPILED FROM UNITED NATIONS MAP N° 279 REV. 3
DATED MARCH 1962

13

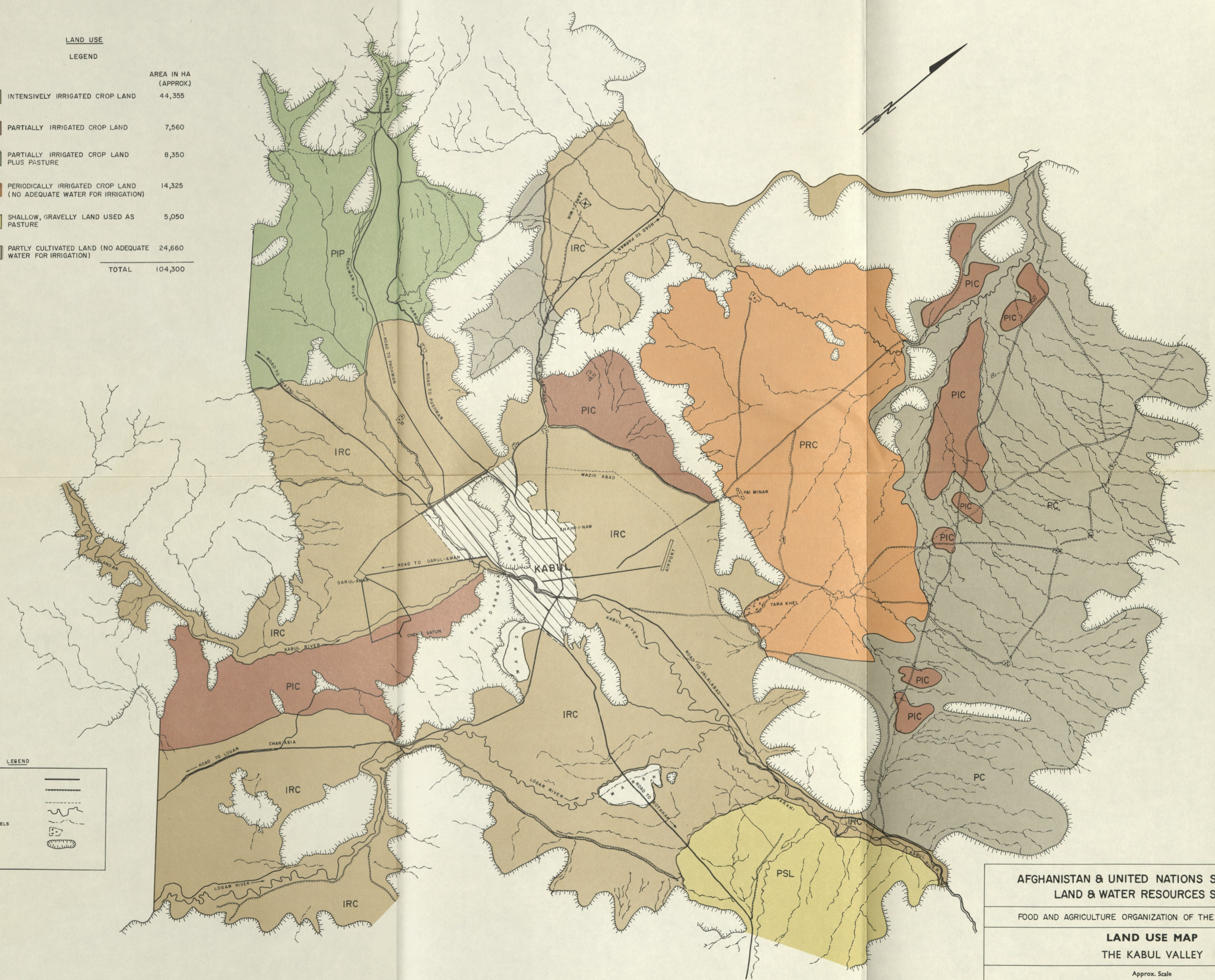
DRAWING N° VOL.III-1, VOL.I-6

FAO/SF:9/AFG/V.3

LAND USE

LEGEND

	AREA IN HA (APPROX.)
IRC INTENSIVELY IRRIGATED CROP LAND	44,355
PIC PARTIALLY IRRIGATED CROP LAND	7,560
PIP PARTIALLY IRRIGATED CROP LAND PLUS PASTURE	8,350
PRC PERIODICALLY IRRIGATED CROP LAND (NO ADEQUATE WATER FOR IRRIGATION)	14,325
PSL SHALLOW, GRAVELLY LAND USED AS PASTURE	5,050
PC PARTLY CULTIVATED LAND (NO ADEQUATE WATER FOR IRRIGATION)	24,660
TOTAL	104,300



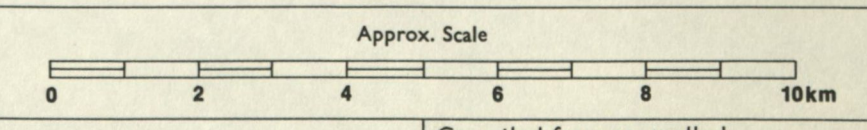
LEGEND

PRIMARY ROADS	
JEEP TRACKS	
TRAILS	
RIVER	
DRAINAGE CHANNELS	
VILLAGES	
HILLY TERRAIN	

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LAND & WATER RESOURCES SURVEY

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

LAND USE MAP
THE KABUL VALLEY



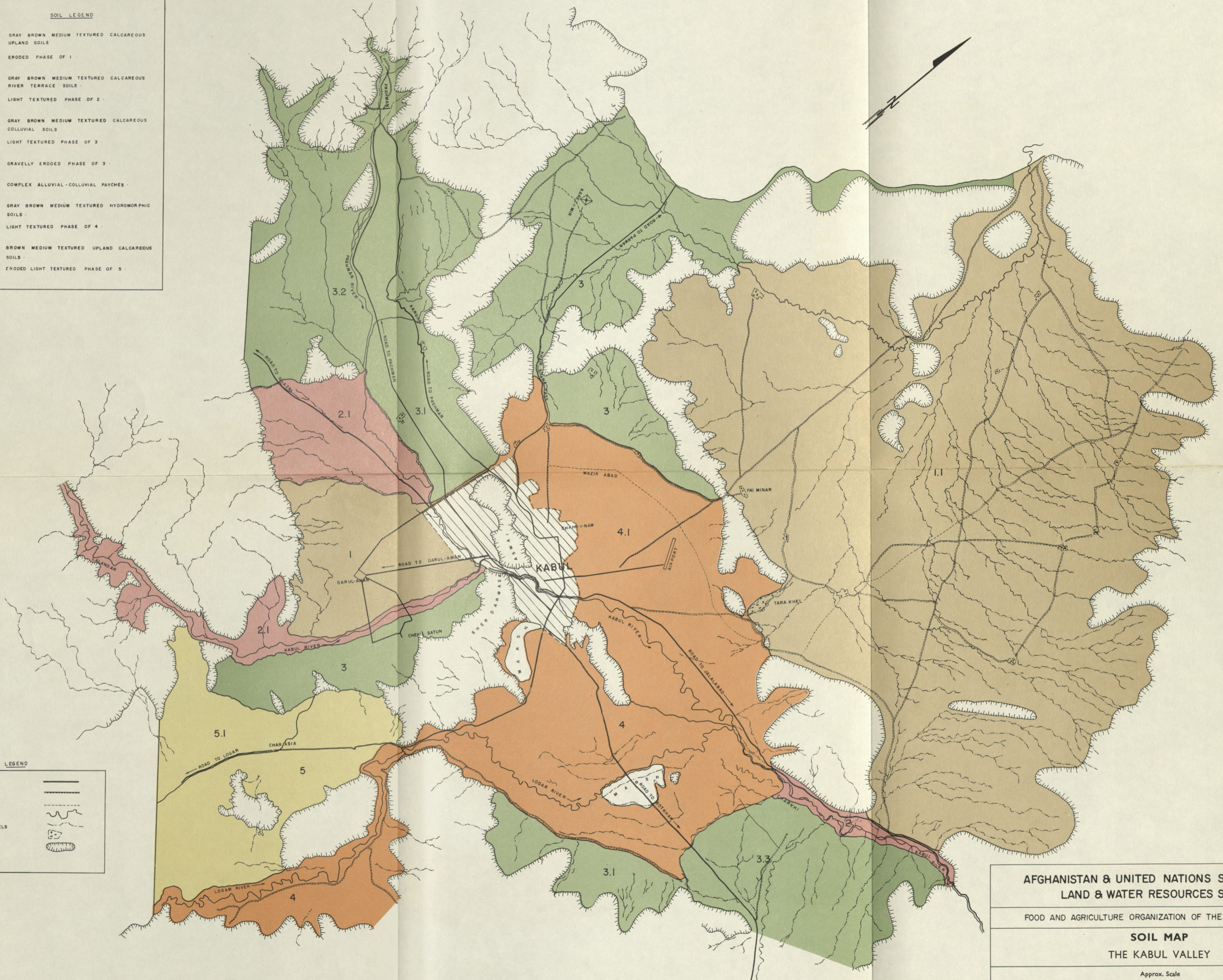
Surveyed March-April 1963

Compiled from controlled
air photographs

Drawing No. Vol. IV-9

SOIL LEGEND

- 1 GRAY BROWN MEDIUM TEXTURED CALCAREOUS UPLAND SOILS
- 1.1 ERODED PHASE OF 1
- 2 GRAY BROWN MEDIUM TEXTURED CALCAREOUS RIVER TERRACE SOILS
- 2.1 LIGHT TEXTURED PHASE OF 2
- 3 GRAY BROWN MEDIUM TEXTURED CALCAREOUS COLLUVIAL SOILS
- 3.1 LIGHT TEXTURED PHASE OF 3
- 3.2 GRAVELLY ERODED PHASE OF 3
- 3.3 COMPLEX ALLUVIAL-COLLUVIAL PATCHES
- 4 GRAY BROWN MEDIUM TEXTURED HYDROMORPHIC SOILS
- 4.1 LIGHT TEXTURED PHASE OF 4
- 5 BROWN MEDIUM TEXTURED UPLAND CALCAREOUS SOILS
- 5.1 ERODED LIGHT TEXTURED PHASE OF 5



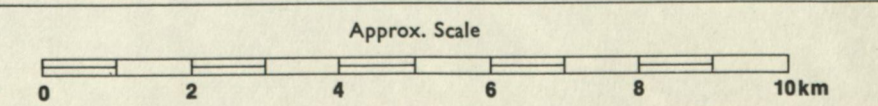
LEGEND

- PRIMARY ROADS
- JEEP TRACKS
- TRAILS
- RIVER
- DRAINAGE CHANNELS
- VILLAGES
- HILLY TERRAIN

AFGHANISTAN & UNITED NATIONS SPECIAL FUND
LAND & WATER RESOURCES SURVEY

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

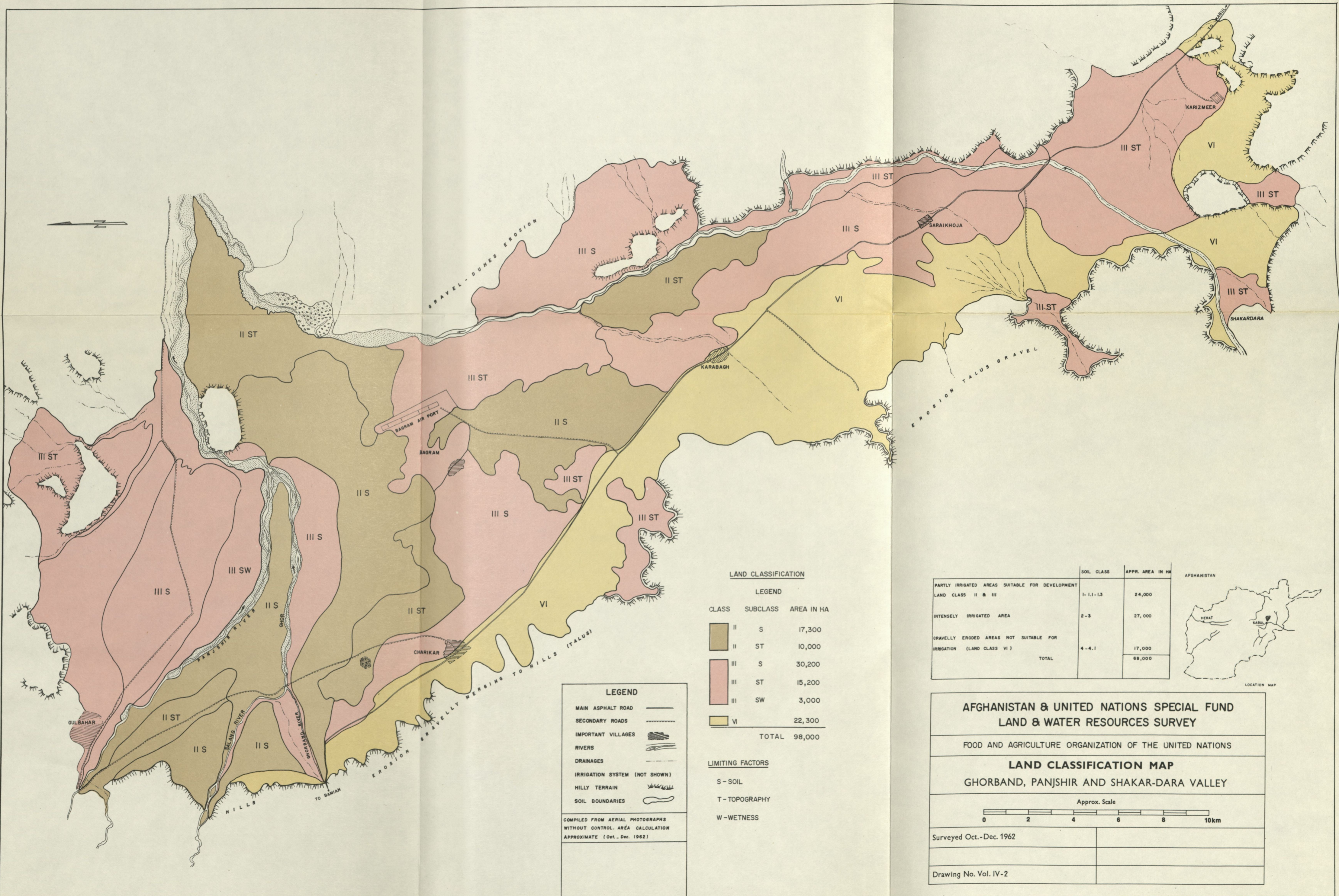
SOIL MAP
THE KABUL VALLEY



Surveyed March-April 1963

Compiled from controlled
air photographs

Drawing No. Vol. IV-7



LAND CLASSIFICATION

LEGEND

CLASS	SUBCLASS	AREA IN HA
II	S	17,300
II	ST	10,000
III	S	30,200
III	ST	15,200
III	SW	3,000
VI		22,300
TOTAL		98,000

LIMITING FACTORS

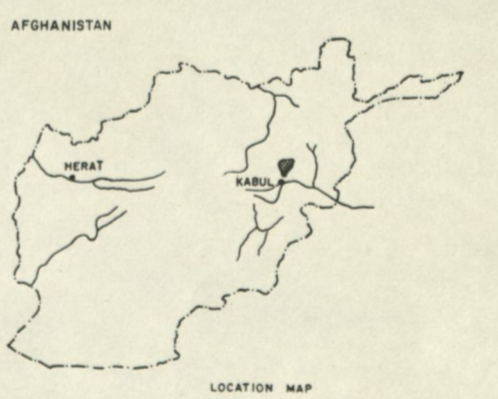
S - SOIL
 T - TOPOGRAPHY
 W - WETNESS

LEGEND

MAIN ASPHALT ROAD ———
 SECONDARY ROADS - - - - -
 IMPORTANT VILLAGES [Symbol]
 RIVERS [Symbol]
 DRAINAGES [Symbol]
 IRRIGATION SYSTEM (NOT SHOWN) [Symbol]
 HILLY TERRAIN [Symbol]
 SOIL BOUNDARIES [Symbol]

COMPILED FROM AERIAL PHOTOGRAPHS
 WITHOUT CONTROL. AREA CALCULATION
 APPROXIMATE (Oct.-Dec. 1962)

	SOIL CLASS	APPR. AREA IN HA
PARTLY IRRIGATED AREAS SUITABLE FOR DEVELOPMENT LAND CLASS II & III	1-1.1-1.3	24,000
INTENSELY IRRIGATED AREA	2-3	27,000
GRAVELLY ERODED AREAS NOT SUITABLE FOR IRRIGATION (LAND CLASS VI)	4-4.1	17,000
TOTAL		68,000



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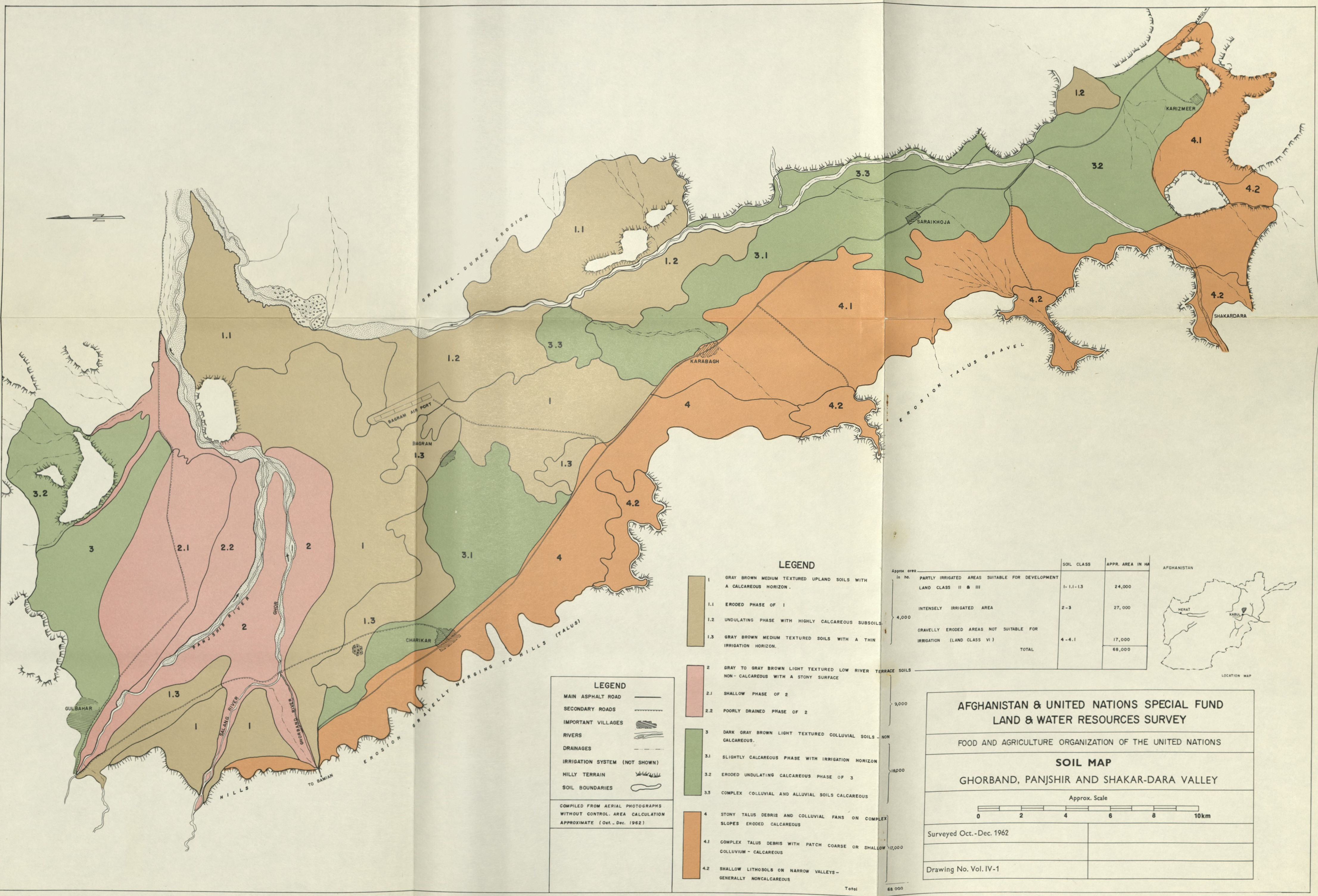
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

LAND CLASSIFICATION MAP
 GHORBAND, PANJSHIR AND SHAKAR-DARA VALLEY

Approx. Scale
 0 2 4 6 8 10km

Surveyed Oct.-Dec. 1962

Drawing No. Vol. IV-2



LEGEND

MAIN ASPHALT ROAD ———
 SECONDARY ROADS - - - - -
 IMPORTANT VILLAGES [Symbol]
 RIVERS [Symbol]
 DRAINAGES [Symbol]
 IRRIGATION SYSTEM (NOT SHOWN) [Symbol]
 HILLY TERRAIN [Symbol]
 SOIL BOUNDARIES [Symbol]

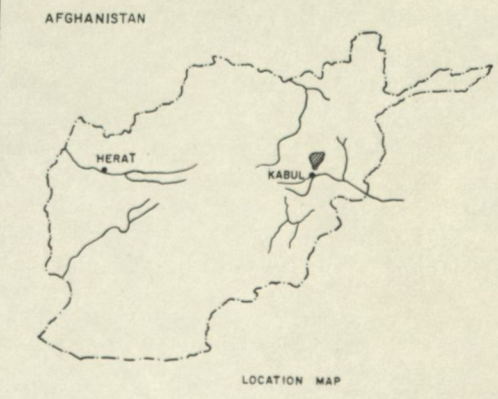
COMPILED FROM AERIAL PHOTOGRAPHS
 WITHOUT CONTROL. AREA CALCULATION
 APPROXIMATE (Oct.-Dec. 1962)

LEGEND

1 GRAY BROWN MEDIUM TEXTURED UPLAND SOILS WITH A CALCAREOUS HORIZON.
 1.1 ERODED PHASE OF 1
 1.2 UNDULATING PHASE WITH HIGHLY CALCAREOUS SUBSOILS
 1.3 GRAY BROWN MEDIUM TEXTURED SOILS WITH A THIN IRRIGATION HORIZON.
 2 GRAY TO GRAY BROWN LIGHT TEXTURED LOW RIVER TERRACE SOILS NON-CALCAREOUS WITH A STONY SURFACE
 2.1 SHALLOW PHASE OF 2
 2.2 POORLY DRAINED PHASE OF 2
 3 DARK GRAY BROWN LIGHT TEXTURED COLLUVIAL SOILS - NON-CALCAREOUS.
 3.1 SLIGHTLY CALCAREOUS PHASE WITH IRRIGATION HORIZON
 3.2 ERODED UNDULATING CALCAREOUS PHASE OF 3
 3.3 COMPLEX COLLUVIAL AND ALLUVIAL SOILS CALCAREOUS
 4 STONY TALUS DEBRIS AND COLLUVIAL FANS ON COMPLEX SLOPES ERODED CALCAREOUS
 4.1 COMPLEX TALUS DEBRIS WITH PATCH COARSE OR SHALLOW COLLUVIUM - CALCAREOUS
 4.2 SHALLOW LITHOLSOLS ON NARROW VALLEYS - GENERALLY NONCALCAREOUS

Total 68,000

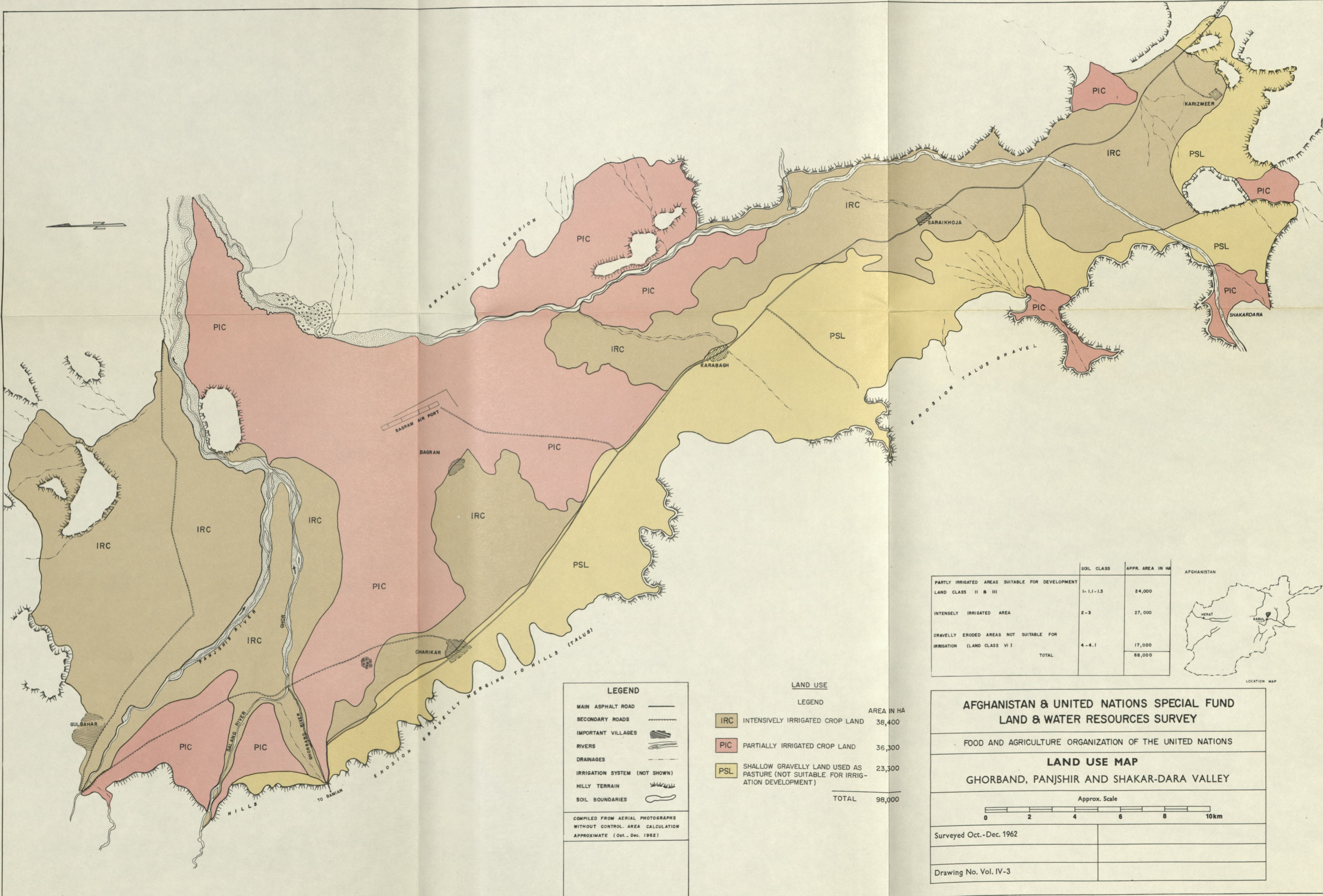
Approx area in ha.	SOIL CLASS	APPR. AREA IN HA.
4,000	PARTLY IRRIGATED AREAS SUITABLE FOR DEVELOPMENT LAND CLASS II & III	1-1.1-1.3 24,000
	INTENSELY IRRIGATED AREA	2-3 27,000
	GRAVELLY ERODED AREAS NOT SUITABLE FOR IRRIGATION (LAND CLASS VI)	4-4.1 17,000
	TOTAL	68,000



AFGHANISTAN & UNITED NATIONS SPECIAL FUND
LAND & WATER RESOURCES SURVEY
 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
SOIL MAP
 GHORBAND, PANJSHIR AND SHAKAR-DARA VALLEY

Approx. Scale

Surveyed Oct.-Dec. 1962
 Drawing No. Vol. IV-1



LEGEND

MAIN ASPHALT ROAD ———
 SECONDARY ROADS - - - - -
 IMPORTANT VILLAGES ■■■■■
 RIVERS ———
 DRAINAGES - - - - -
 IRRIGATION SYSTEM (NOT SHOWN) ———
 HILLY TERRAIN ———
 SOIL BOUNDARIES ———

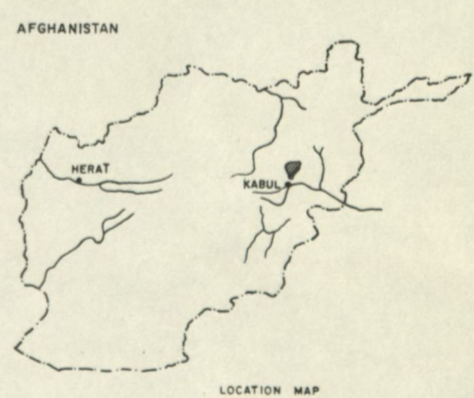
COMPILED FROM AERIAL PHOTOGRAPHS
 WITHOUT CONTROL AREA CALCULATION
 APPROXIMATE (Oct.-Dec. 1962)

LAND USE

LEGEND

LAND USE	AREA IN HA
IRC INTENSIVELY IRRIGATED CROP LAND	38,400
PIC PARTIALLY IRRIGATED CROP LAND	36,300
PSL SHALLOW GRAVELLY LAND USED AS PASTURE (NOT SUITABLE FOR IRRIGATION DEVELOPMENT)	23,300
TOTAL	98,000

	SOIL CLASS	APPR. AREA IN HA
PARTLY IRRIGATED AREAS SUITABLE FOR DEVELOPMENT LAND CLASS II & III	I-1.1-L3	24,000
INTENSIVELY IRRIGATED AREA	2-3	27,000
GRAVELLY ERODED AREAS NOT SUITABLE FOR IRRIGATION (LAND CLASS VI)	4-4.1	17,000
TOTAL		68,000



**AFGHANISTAN & UNITED NATIONS SPECIAL FUND
LAND & WATER RESOURCES SURVEY**

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

LAND USE MAP
GHORBAND, PANJSHIR AND SHAKAR-DARA VALLEY

Approx. Scale

Surveyed Oct.-Dec. 1962

Drawing No. Vol. IV-3