平成2年度 海外農業開発事業

事 前 調 査 報 告 書

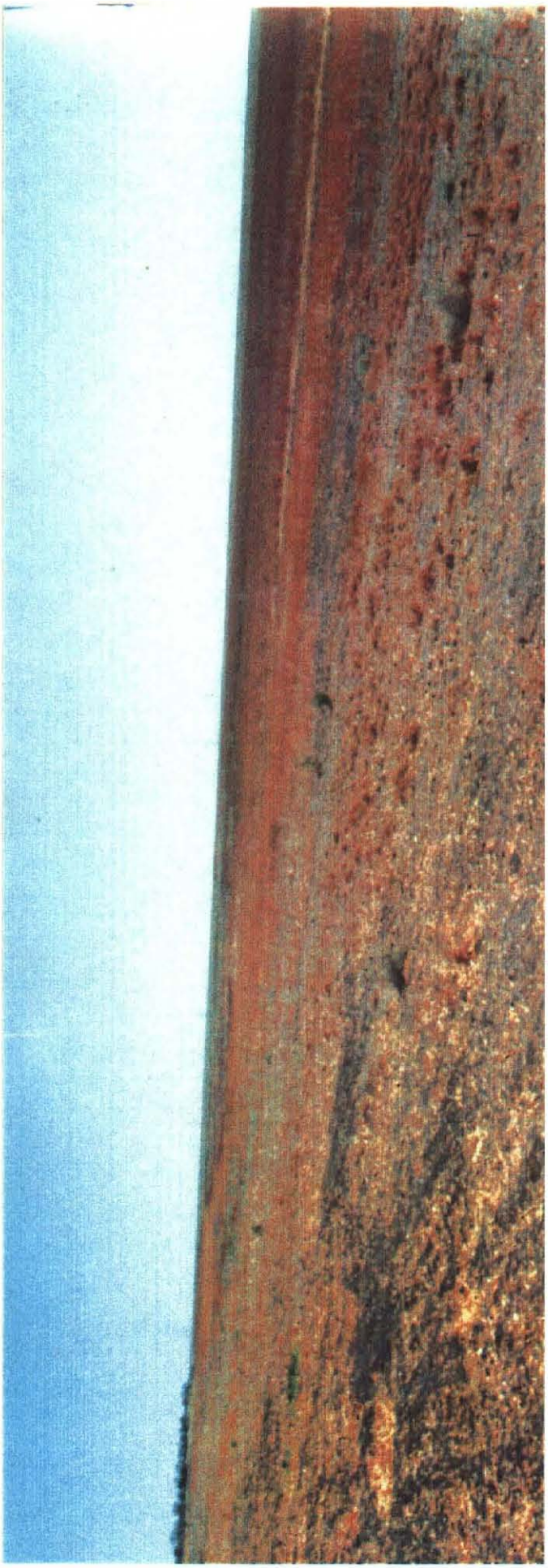
ナミビア共和国

リアムベジ湖周辺農業農村開発計画
東カプリビ州米生産促進計画
リニヤンティ灌漑農場拡張計画
カバンゴ州東部灌漑農業開発計画
オワムボ州農業総合開発計画

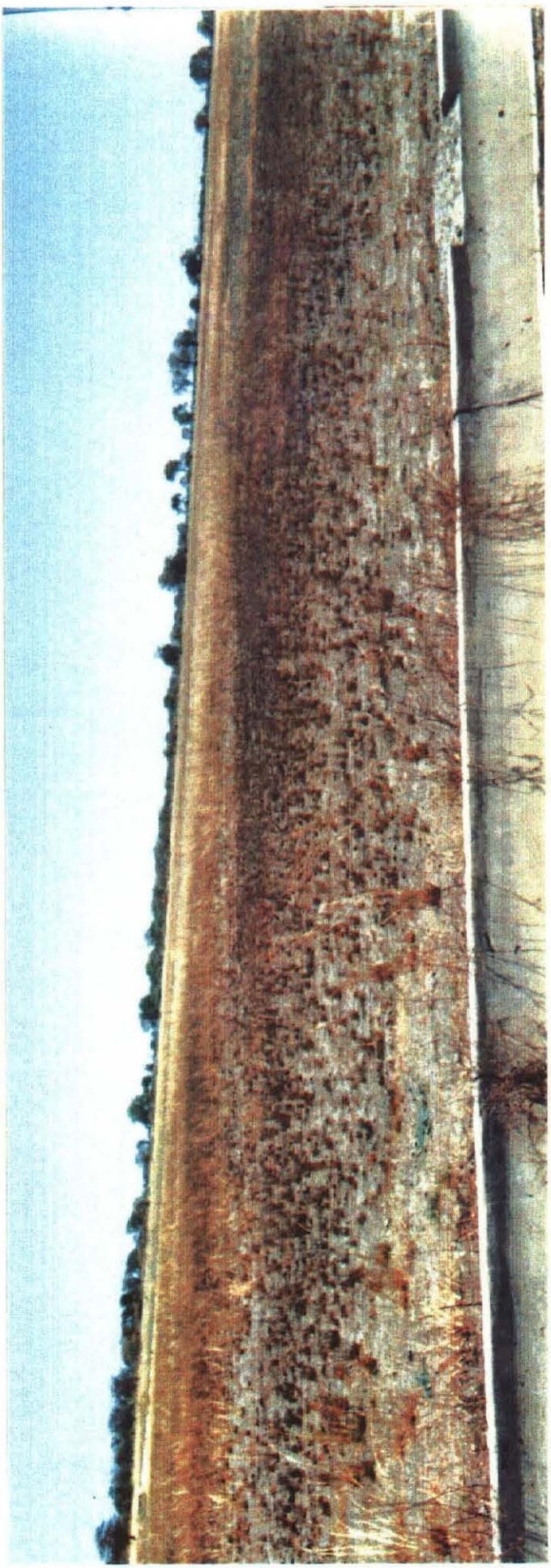
平 成 2 年 10 月

(社)海外農業開発コンサルタンツ協会(ADCA)

国 際 航 業 株 式 会 社



リヤンベジ湖



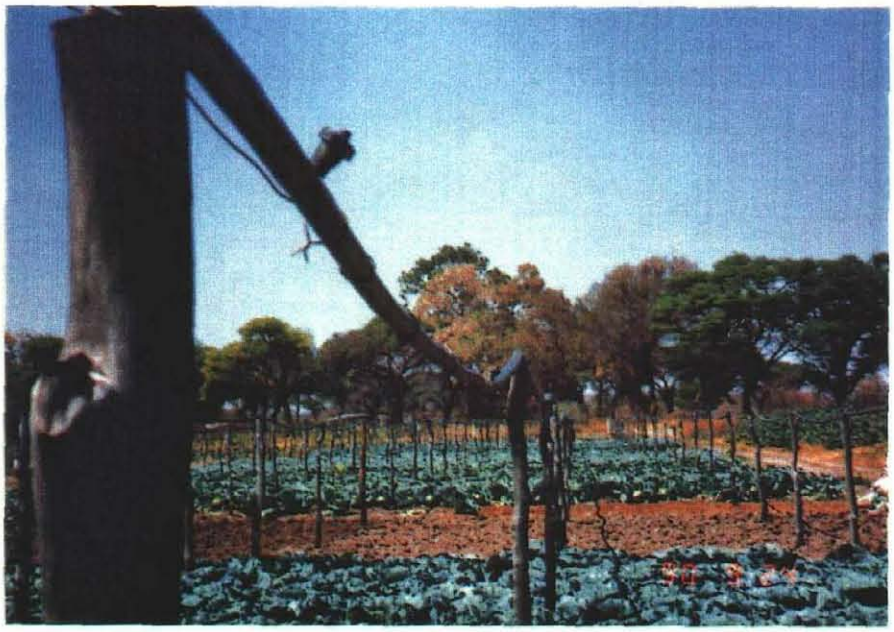
イシズ地区水田
（手前は水路）

イシズプロジェクトの車庫

リニヤンティ農場ポンプ場

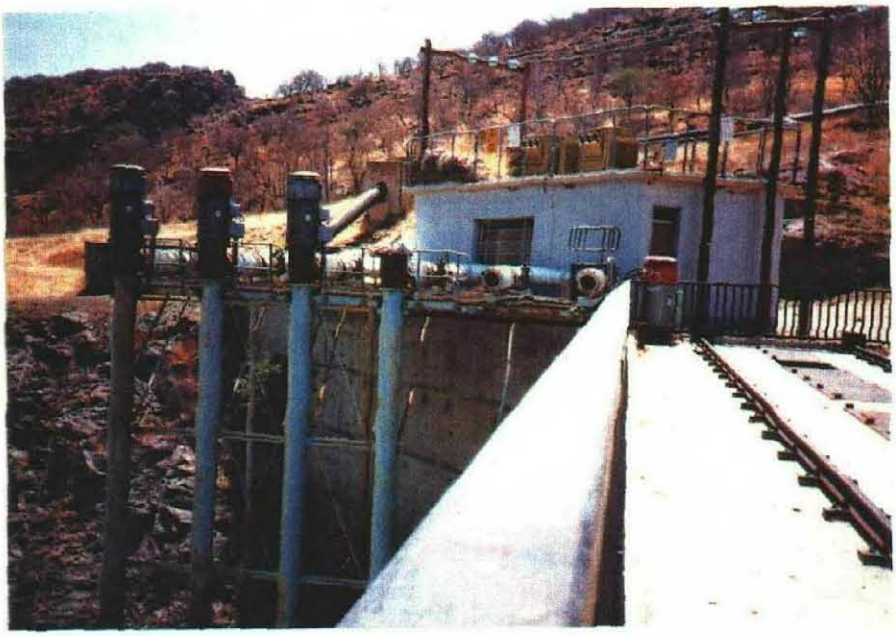
リニヤンティ農場

ムセセ農場

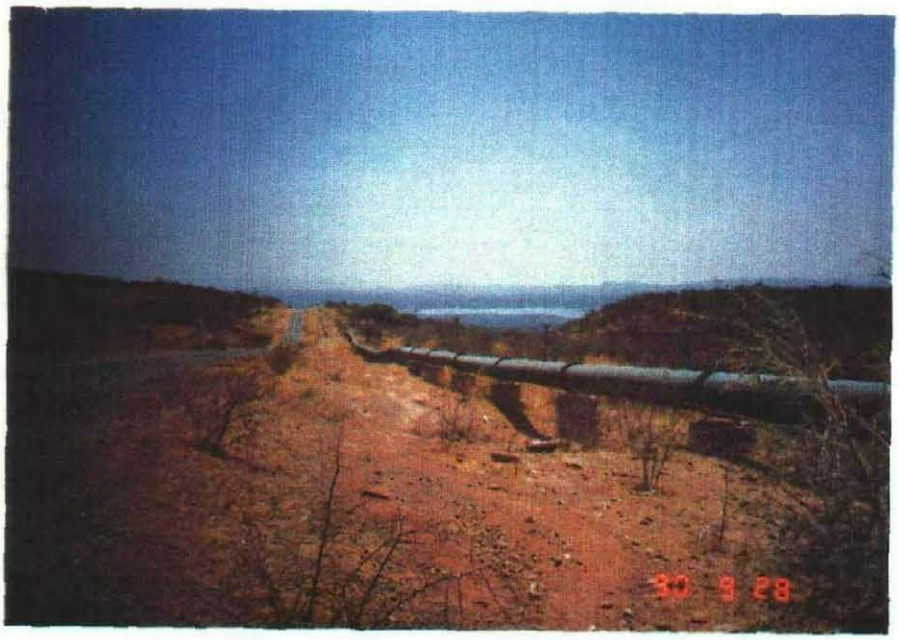


コパノ農場

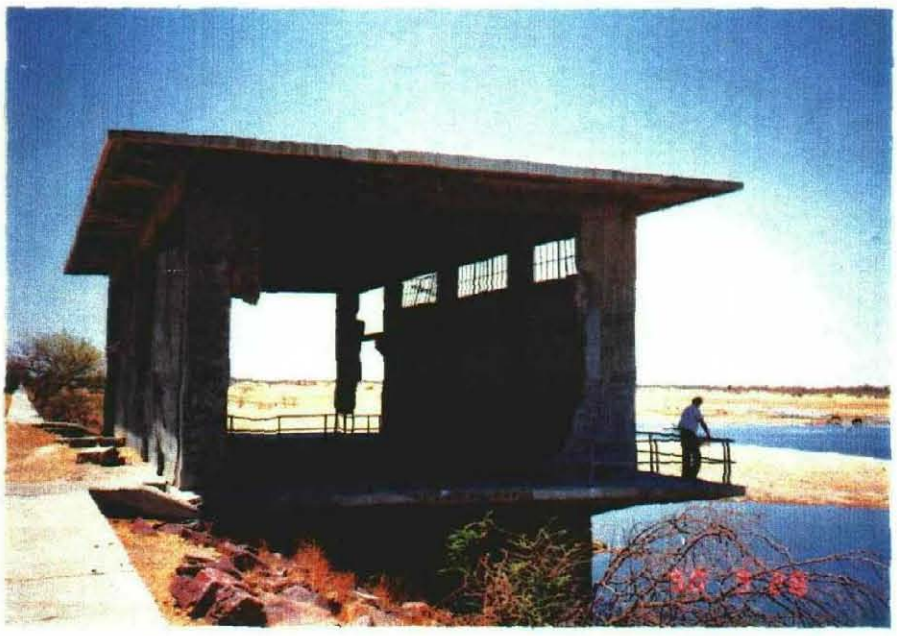
イシズのフローティングポンプ



ルアカナのポンプ場（オワンボ）



送水管　（オワンボ）

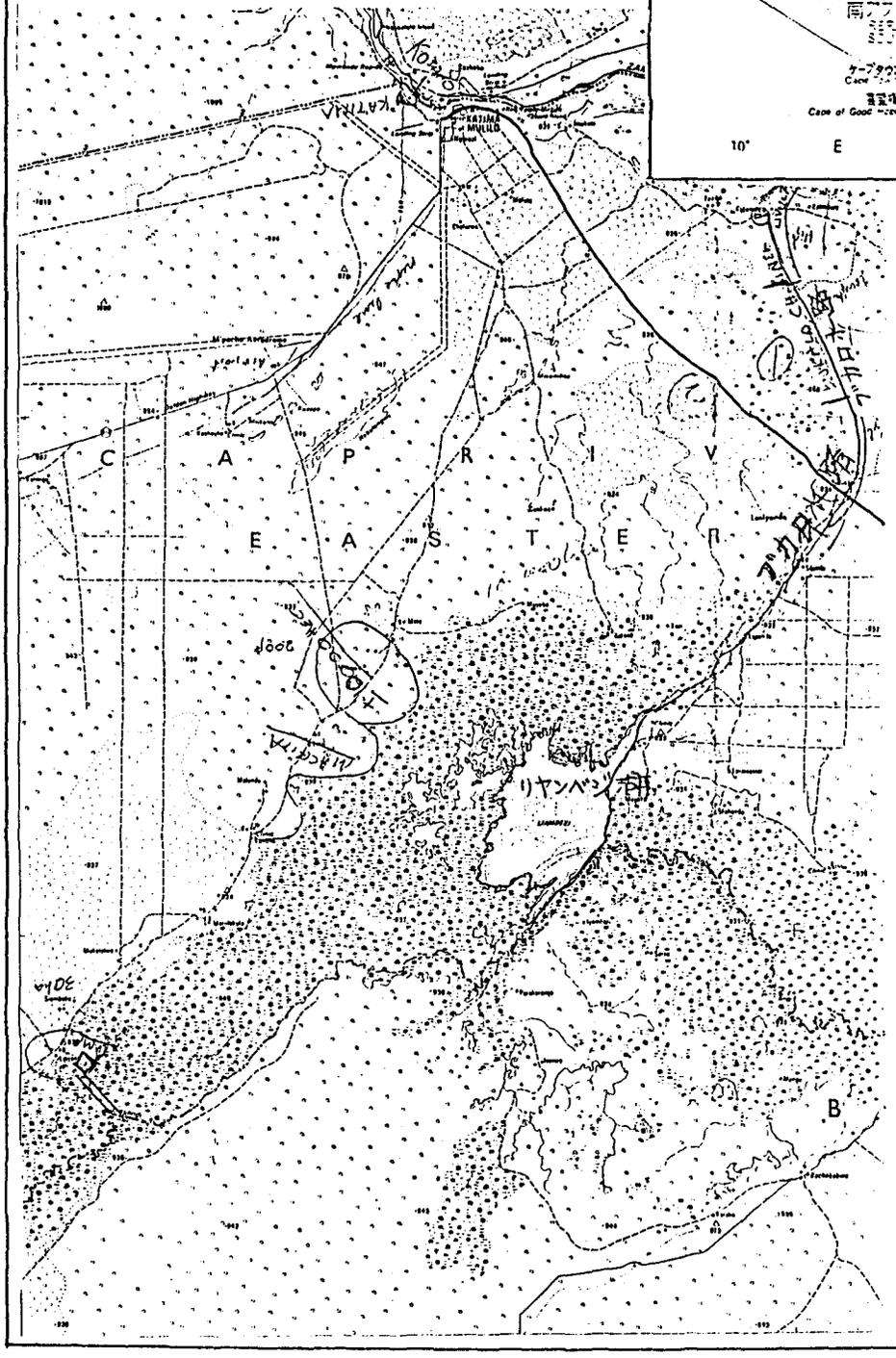


オルサンジャ調整池　（戦争で破壊されている）

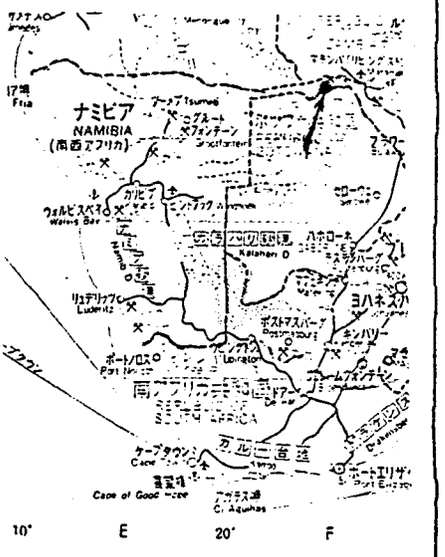
様式 2－2　平成2年度のODA実施案件概要

国名 ナミビア　　案件名 リヤンベジ湖周辺農業農村開発計画

計画図



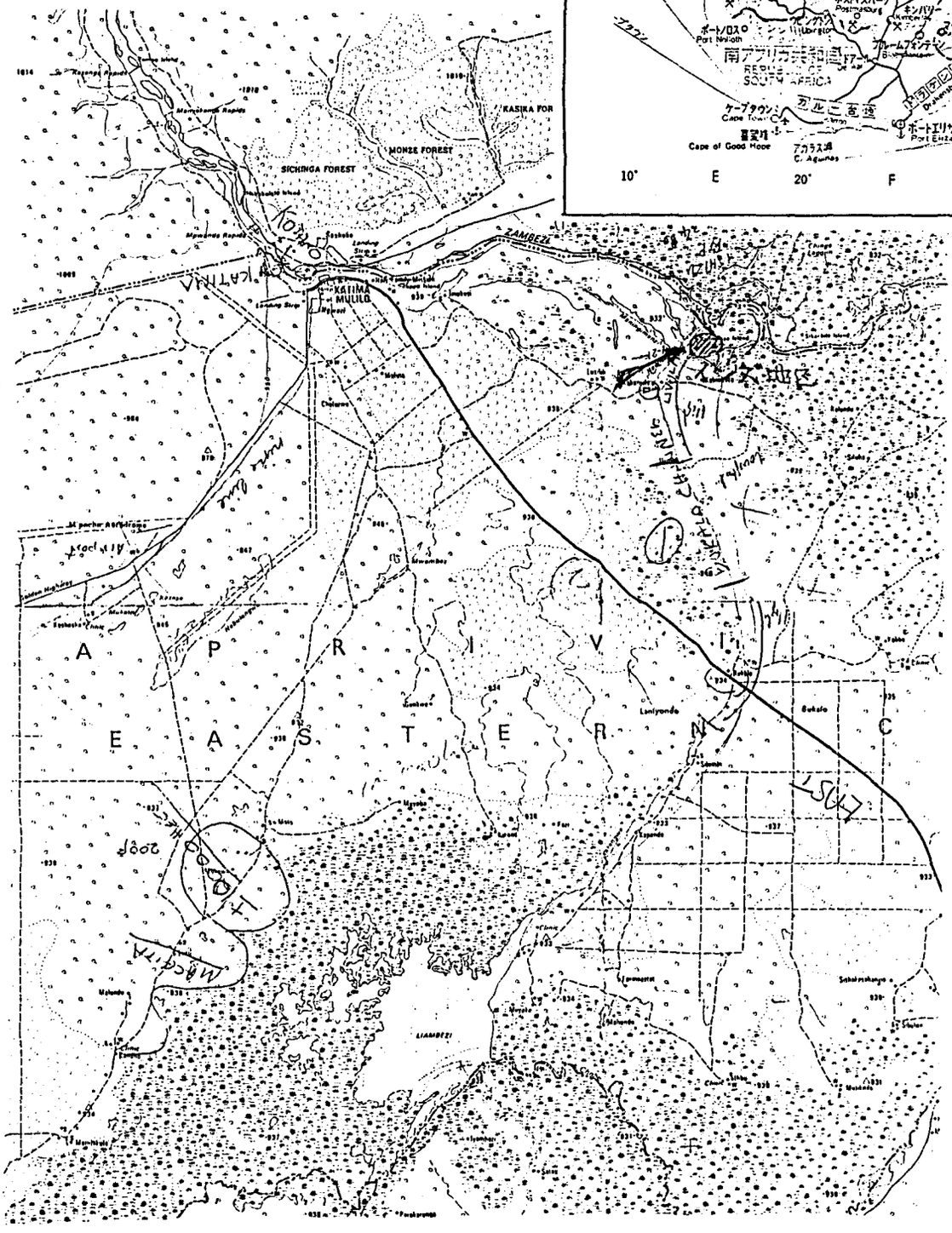
位置図



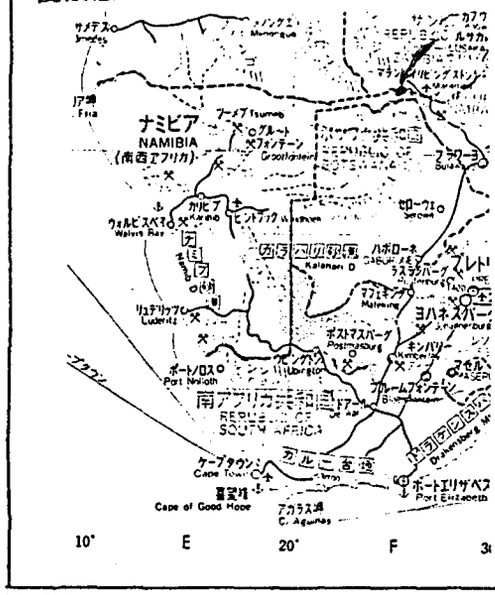
様式２－２　平成２年度のＦＡＦ実施案件概要

国名　ナミビア　案件名　東カプリビ州米生産促進計画

計画図



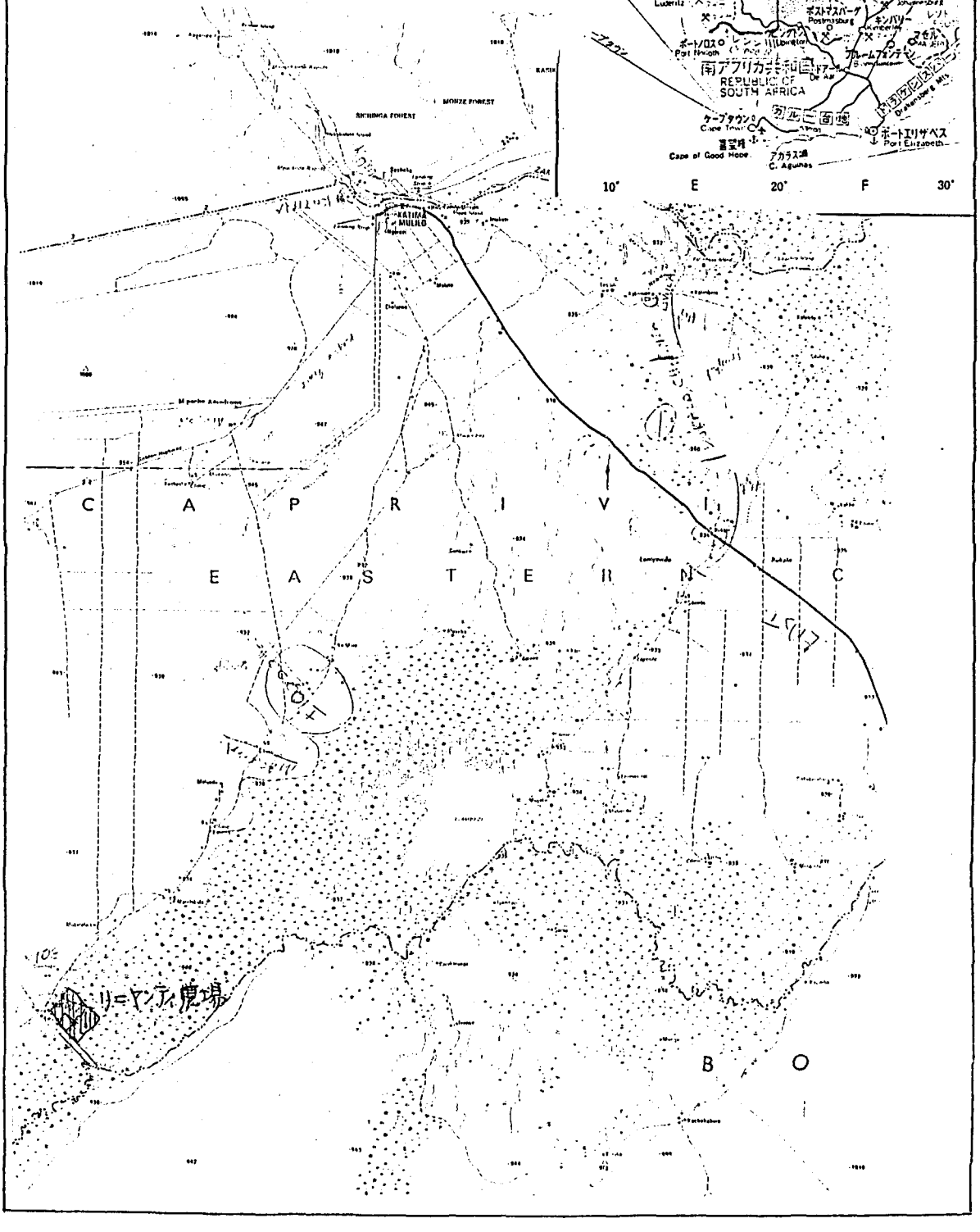
位置図



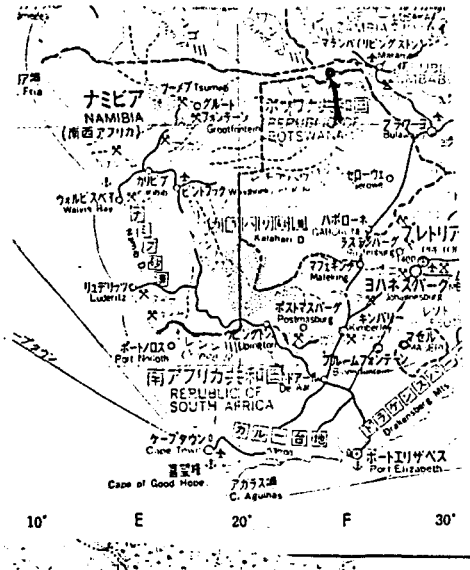
様式 2－2　平成2年度のドナー支援案件概要

国名 ナミビア　　案件名 リニヤンティ農場拡張計画

計画図



位置図

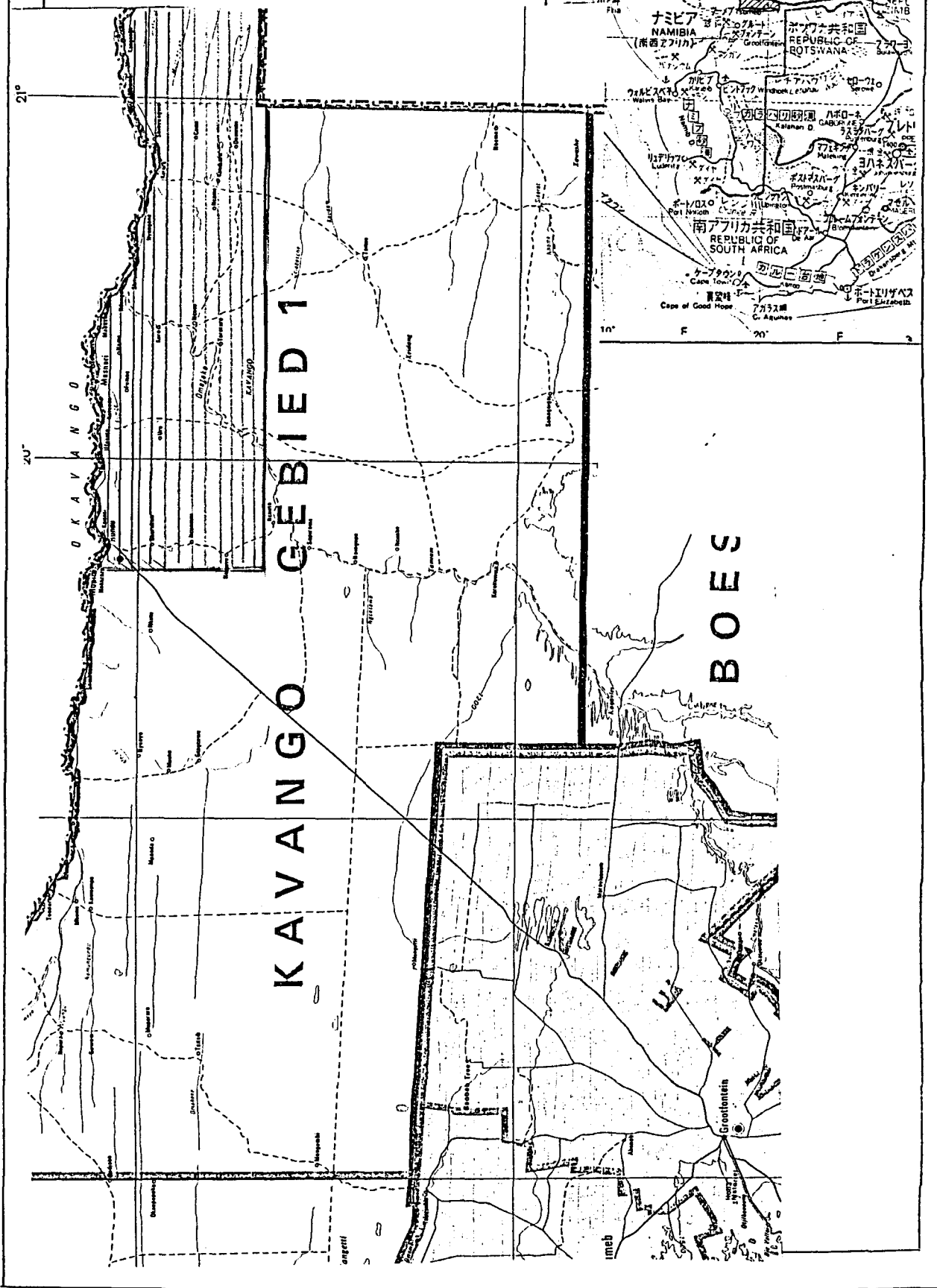


様式２－２　平成２年度のアフ案件概要

国名　ナミビア　案件名　カバンゴ東部農業開発計画

計画図

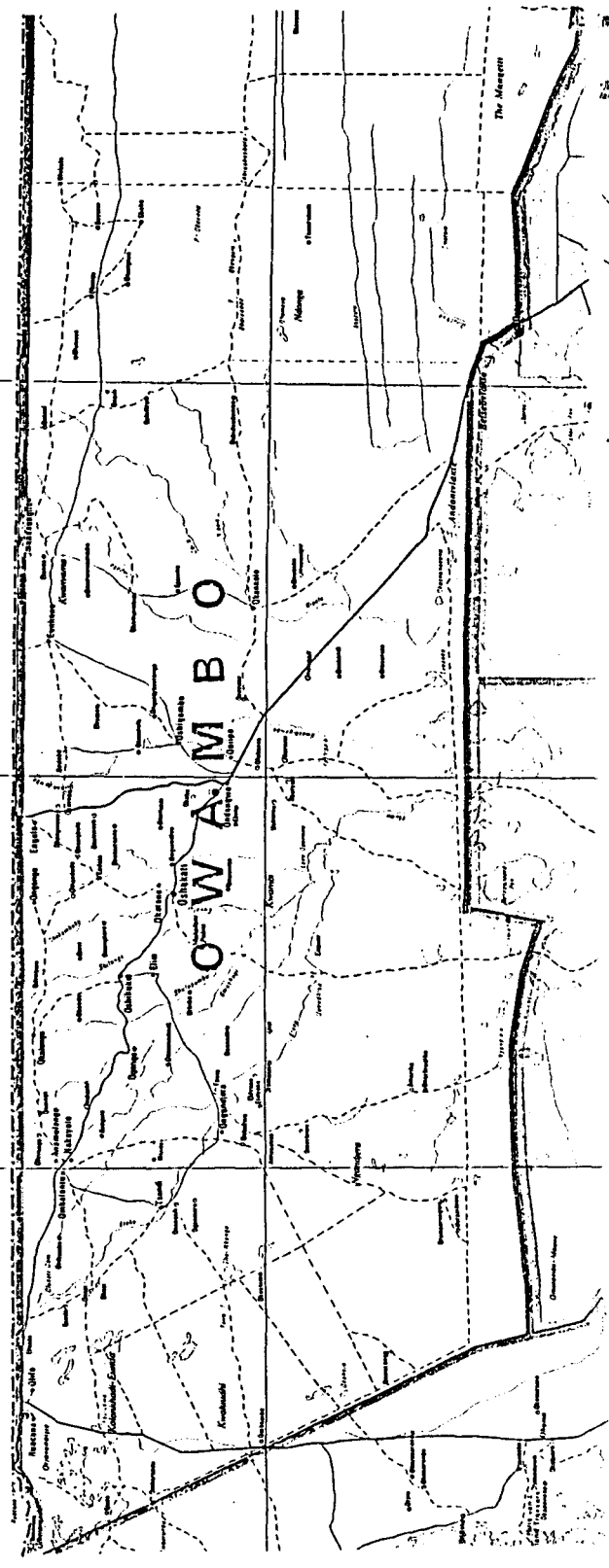
位置図



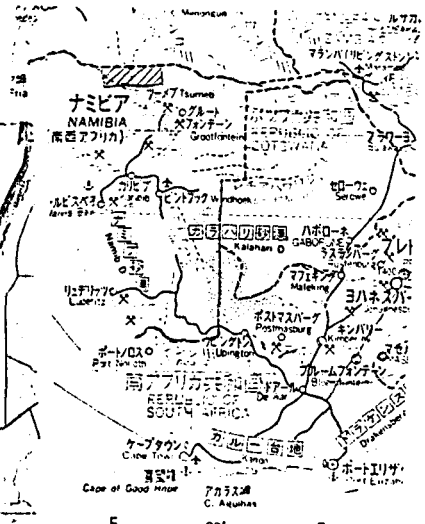
様式２－２　平成２年度のＦＡＦ案件概要

国名　ナミビア　案件名　オワンボ州農業農村開発計画

計画図



位置図



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１．　緒言

（社）海外農業開発コンサルタンツ協会（ＡＤＣＡ）調査団は、平成２年９月１７日から１０月９日までの期間、各関係機関を訪問し、農業開発上の諸問題について意見の交換、資料の収集及び現地踏査を行った。

ナミビアは、１８８４年に南西アフリカとして独の保護領となったが、１９１５年に南ア軍に占領され１９２０年に国際連盟により南アの委任統治下におかれた。１９６６年に国連は、南西アに対する南アの委任統治権は終了し、同地域は国連の直接の責任下に入れられる旨決議した後も、南アの不法統治は続けられた。　１９８２年南アがナミビア独立問題をアンゴラ駐留キューバ兵の撤退を条件とする案を発表し１９８８年に合意に達し同年１１月の制憲議会選挙を経て１９９０年３月の独立に至った。今後数年を完全独立への移行期間として、経済的独立を果すため諸国の援助や外国の投資を強く求めている。

ナミビア経済は、鉱業及び農業（牧畜）が中心であり、農業は輸出向けの牧畜（カラクール羊、肉牛）が中心で、食糧作物の栽培は極めて少なく、主として北部で行われているが、その生産量は少なく、必要量のほとんどは南アからの輸入に依存している。従って食糧自給率の向上、輸出作物の促進、不均衡な経済構造の是正の上から、北部農業地域の開発は極めて重大かつ緊急を要する課題である。

特に東カプリビ州においては、水資源、気候、土壌等の自然条件に恵まれ、近年国内外に需要の高まりつつある米の生産に意欲的であるが技術と資金の欠如に阻まれており、世界に誇る日本の米作の技術と資金援助に非常に期待している。またこの州は他の州に比べて極めて作物の栽培に適しており将来はナミビアの重要な食糧供給基地になることは疑いない。従ってこの州においてまず重要かつ実効性の早い計画に着手し次第に他の州に広げて行くのが得策と思われる。

本報告書は農業地域である北部三州について調査結果を簡単にまとめたものであるが、出来るだけ早い時期に日本国政府の技術、経済協力の対象となることを、相手国政府の関係者も強く希望しており、調査団としてもその方向に進むことを切に願っている。

終わりに、本調査の実施に当たり、多大なるご協力をいただいたナ政府の関係機関、在ブジュンブラ日本大使館及び関連機関の方々に深く謝意を表する。

平成２年１０月　　ＡＤＣＡ調査団長

山田　稔美

2．　ナミビア国の背景

ナミビア国の面積８２３，１４４㎢の大部分は南緯１８°と２８°の間、東経１４°と２１°の間にある。西は大西洋に、北はアンゴラに、北東はザンビアに、東はボツワナに、そして南は南アフリカに接している。

ナミビアは１８８４年に「南西アフリカ」として独の保護領となり、その後南ア軍が進攻して１９１５年南ア軍が占領、軍事総督による統治を開始した。１９２０年国際連盟が南西アフリカを南アの委任統治下におき、１９６６年国連は南西アフリカに対する南アの委任統治権は終了し、同地域は国連の直接の責任下に入れられる旨決議した。１９６８年国連、南西アフリカをナミビアと改称した。しかし南アの不法統治が続き実際にナミビアが独立したのは１９８９年制憲議会選挙が実施され、１９９０年３月２１日にナミビア共和国としてである。

ナミビアは地形から四つの地域に分けられる。　即ち海岸線沿いに幅８０～１２０ｋｍの帯状に広がるナミブ砂漠、内陸中央を覆う標高１０００～２０００ｍの半乾燥山岳高原地帯、ボツワナ、南アフリカの乾燥カラハリとカルー地域の延長である北東及び南東の地域、及びエトシャ・パンの北とかなり降雨量の多いカバンゴと東カプリビにある潅木に覆われた平原である。

気候は典型的な半乾燥である。即ち日中は暑く夜は冷える。夏の気温は４０°Ｃを越える。一方冬は日中は十分暖かいが明け方には氷点下に下がることも多い。内陸部では二つの雨期があり、一つは短く一つは長い。短い雨期は１０月から１２月にあり、主雨期は１月中から４月にあり、雷雨を伴うことが多い。その他の月は雲もなく乾燥した気候である。

ナミビアの人口は１２６２千人で、人口密度は１．５人／㎢であり世界最小である。

ナミビアの経済は、その経済活動は伝統的な自給自足狩猟経済から、近代産業部門の高度技術経済に至るまで二重構造の性格をもっている。経済的生産部門は主として鉱業、農業、水産である。これらの部門でＧＤＰの約４０％、総輸出額の約９０％をしめている。自給自足農業はこのなかに含まれていないが、人口の約５０％がこれに従事し、ＧＤＰの５％に当たると推定される。

ナミビア国の経済的独立を達成する為には、国家開発戦術の確立と経済活動組織の創設が必要である。そのためには鉱産物の価値を上げ、小規模経営農地に潅漑をすることによる食糧生産の推進（北部がその適地である）、及び南アと競合している農産物の加工業に対するある程度の保護の導入が必要である。　また近年農業が発展しつつあるとは言え、食糧の南アへの依存度は依然高く、豚６０％、ブロイラー９０％、卵４０％、野菜８０％、ホワイトメーズ７３％、イエローメーズ４７％、小麦８５％を依存している。食糧自給率を上げることは極めて重要である。

農業はＧＤＰの１０％しか占めないが、人口の７０％が生計を農業に依存している。市場農業分野では労働人口の１６％が従事するに過ぎないが村落共同地域では９０％の人口が自給自足の形態で従事している。

畜産（牛、山羊、羊）と乾燥地農業が主体であるが、その他に小規模酪農、豚、小規模潅漑農業や若干の林業活動を行っている。

農業開発は農業施設と高価なパイプラインによって得られる用水の不足によって阻害されている。

ナミビア農業の二つの重要な特徴は土地の偏った所有形態と畜産主体で作物農業が比較的少ないことである。地方における失業者と飢餓の増加という実態の中でこのことは緊急に注意されねばならない。

ナミビア北部の農業地域について特筆すべきことは、前回の戦争において戦場であった事である。地域経済は長い間戦争によって齎されたものであり、終戦後は経済構造は完全に破壊され、失業者のみが残された。

以上のような現状から、優先度の高い分野は農業、農村開発、教育、保健と住宅である。

3．　リアムベジ湖周辺農業農村開発計画

（1）　東カプリビ州

東カプリビ州は南にボツワナ北にアンゴラとザンビアに挟まれており、西はクワンド川、北東及び東はザンビア川、南はザンビア川の支流リニアンティ川に囲まれている。標高は９００～１０００ｍの高地であり、従って気温は低く亜熱帯性の気候を呈している。平均年降水量は約７００㎜で、その殆どは１１月から４月に降る。

月別平均気象データー　（カティマ　ムリロ）

月	降水量　mm	蒸発量　mm	気温　°C
JAN	177	191	25.3
FEB	161	185	25.3
MAR	98	210	24.0
APR	23	190	22.6
MAY	4	180	18.7
JUN	0	153	15.6
JUL	0	174	15.2
AUG	0	215	18.5
SEP	1	252	25.3
OCT	20	298	25.9
NOV	75	236	24.5
DEC	146	206	24.3
計	705	2490	

東カプリビ州は孤島のようにナミビア国から北東方向に離れて位置しているので、交通の便が悪く、開発が遅れている。

しかし本地域は川に囲まれているので水資源に恵まれており、川の氾濫によって土壌も肥沃である。従ってナミビア及び周辺諸国に対して特産物の生産が可能である。即ち米、砂糖、タバコ、果樹、野菜、水産等が注目されている。

（2）　リヤンベジ湖

州の中央南部にリヤンベジ湖があり、州南部の開発に重要な役割を果して来た。この湖はザンベジ川とブカロ川によって結ばれており、ザンベジ川の水位が７．５ｍ（基準は仮ベンチ）を越えるとザンベジ川から湖に水が流れるが、それ以下の水位では水は

流れない。しかし１９８５年以来湖に水が流れず、干上がった状態が続いており、このまま続けば周囲の住民が土地を離れる恐れが生じている。

従ってリヤンベジ湖の回復は東カプリビ州の開発の上で最も重要緊急な課題である。この湖を回復する最も簡単な方法はブカロ川延長約５０ｋｍの内ネックになっている約２０ｋｍの部分を掘削し、調節水門を設置することであろう。しかしそれらの諸元を決定する為には湖を利用する農業開発、農村開発、水産開発計画を策定する必要がある。

４．　東カプリビ州米生産促進計画

リアムベジ湖周辺農業農村開発計画の項にも述べたように、東カプリビ州はナミビアにおいては陸の孤島的存在であるが、ボツアナ、ザンビア、アンゴラに接し国際的には要所にある。かつ、水や土壌などの自然条件に恵まれているので、特産品の生産に適している。

ナミビア政府は米の生産に着目し、カティマ　ムリロの東約３０ｋｍにあるイシズ平原において米生産計画のフィージビリティ調査を１９８７年度に実施した。

このフィージビリティ調査によればイシズ平原には４０００ｈａ以上の米生産適地があるが、ナミビア政府は３２ｈａを造成し、事務所、倉庫等を建設し、ポンプ、農業機械、精米機等を購入し、フィリッピン人１名を雇用して米作の指導に当たらせた。その経験によると反収は最高９ｔ／ｈａ、平均で６ｔ／ｈａであったという。しかし資金及び技術の不足、ドイツから輸入した農業機械が水田に適していない等の理由で本年度から中止せざるを得なくなった。

ナミビア政府は日本の経済力と優れた米生産の技術に着目し、当州における米生産を成功させるべく日本の援助に強く期待している。

施設工事費概算

既存水田（３２ｈａ）整備			
圃場整備・均平化	32haxR400	R	１２，８００
水路改修			２０，０００
建物　（事務室 4、研修室 1、実験室 1、その他）			４，０００，０００
車両　（マイクロバス 1、ジープ 2）			２００，０００
農業機械　（トラクター 1、ハンドトラクター 3、付属品 一式）			１，２００，０００
その他　（研修施設、実験施設等）			２６７，２００
計			５，７００，０００
		＝	３１３，５００，０００円

５．　リニヤンティ潅漑農場拡張計画

東カプリビ州の南の境界線であるリニヤンティ川沿いで、ＦＮＤＣはリアンベジ湖

から南西約３５ｋｍの地点から取水し３２ｈａにピポット潅漑によりとうもろこし農場を経営し、地域農業への啓蒙及び雇用促進を図っている。

同様にＦＮＤＣが経営している農場はカティマ　ムリロの西約４ｋｍにも５００ｈａにタバコを栽培しているカティマ農場及び０．８ｈａにキャベツを栽培しているコパノ農場がある。特にコパノ農場においては、２０戸の農家に１戸当たり４００㎡を割り当てて栽培をさせている。

現地の農業省及びＦＮＤＣの担当者によれば、これら三つの農場の内最も優先度の高いのはリニヤンティ農場の拡張である。

６．　カバンゴ州東部潅漑農業開発計画

カバンゴ州はナミビアの北東部で東は西カプリビ州に接し北はアンゴラとの国境線をなしている。

年雨量は５００㎜前後であるがアンゴラとの国境線の東半分はオカバンゴ川からなり、この水の利用が可能である。オカバンゴ川の支流であるオムラムバオマタコ川が州東部で合流し、肥沃な土壌を運び耕作適地を形成している。

この州でＦＮＤＣは次の４っつのプロジェクトを経営し地域農業への啓蒙に努めている。

（１）　ブングブングプロジェクト

ルンド市の東１０ｋｍに位置しオカバンゴ川に面している。

主な活動はミルクの生産、加工及び市場開拓であり、その他果汁、ヨーグルトの生産及び飼料生産として２０ｈａのとうもろこしと、１００ｈａのまめ類の生産である。

用地は４００ｈａで、そのうち現在利用しているのは１６０ｈａ（潅漑耕地５０ｈａ、非潅漑耕地１００ｈａ、建物１０ｈａ）である。

飼育乳牛頭数は１３３頭、１４１１１／日、４２０００１／月の生産能力があるが、市場の都合で現在は６００１／日を生産している。

雇用は職員１６名、臨時雇用１３４名である。

（２）　シテモプロジェクト

ルンド市の東９０ｋｍに位置し、カティマムリロに通ずる道路に面している。

主な活動はピーナッツの生産であり、その他メーズ、綿花、じゃがいもをピーナッツ栽培のローテーションの中で栽培している。

用地は１０００ｈａで、そのうち現在利用しているのは３７０ｈａ（固定センターピポットによる潅漑耕地１６８ｈａ、移動センターピポットによる潅漑耕地１９２ｈａ、建物１０ｈａ）である。

栽培作物は半分はメーズで、約６５ｈａにピーナッツ、残りは綿花、じゃがいも、野菜を栽培している。

職員数は２６名で、臨時雇用刃３０２名である。

（３）　シャディコンゴロプロジェクト

ルンド市の東２００ｋｍに位置しカティマムリロへの道路に面している。

主な活動はメーズの生産でその他粟、ひまわり、小麦を生産している。

用地は１０００ｈａで、そのうち現在利用しているのは３７２ｈａ（センターピボット潅漑耕地１０２ｈａ、スプリンクラー潅漑耕地１２０ｈａ、非潅漑耕地１５０ｈａ）である。

栽培作物は２２２ｈａにメーズ、４５～５０ｈａにひまわり、約１００ｈａに粟であり、冬には１０２ｈａに小麦を栽培している。

職員数は３９名で、臨時雇用は２４８名である。

（４）　ムセセプロジェクト

ルンド市の西９０ｋｍに位置しオカバンゴ川に面している。

主な活動は潅漑によるメーズの栽培で、その他非潅漑で粟を栽培している。

用地は１０００ｈａで、そのうち現在利用しているのは１２０ｈａ（センターピボット潅漑耕地９５ｈａ、非潅漑耕地２５ｈａである。

栽培作物は９５ｈａにメーズ、２５ｈａに粟を栽培している。

職員数は２４名で、臨時雇用は６５名である。

以上のような農場を経営することにより、ＦＮＤＣは地域農業に次のような貢献を果している。

（１）　研究、開発、普及

農民と競合する作物を生産することがＦＮＤＣの目的ではない。ＦＮＤＣのプロジェクトにおいては新しい作物の試験栽培を実施して来た。過去にはホワイトメーズ、綿花、向日葵、小麦、さつまいも、じゃがいも、ピーナッツ、レモン、パイナップル、ビール麦、バナナ、胡椒、たまねぎ等である。また粟の加工も実施している。ボツワナや南アから来た新技術もカバンゴのＦＮＤＣプロジェクトで試験されている。

これらのプロジェクトでの営農技術は農民に移転され耕作の改善に寄与している。

（２）　開墾

ＦＮＤＣは３４００ｈａの借地契約を地方自治体と交わし、毎年８万ランドを支払っている。そのうち２２００ｈａはＦＮＤＣによって開墾され、１０５０ｈａは耕作に利用されている。ＦＮＤＣが利用していない土地はＦＮＤＣの労働者や近隣の農民が耕作することが出来る。彼らは一般に粟を栽培している。ＦＮＤＣは彼らに肥料のようなインプットや耕作サービスを実費で行っている。８９／９０には１０１４ｈａがそのような形で耕作された。

（３）　雇用機会の創成

４っつのプロジェクトで１０５人を雇用している。８９／９０年度には約５３万ランドの給料を支払った。臨時雇用は季節によって異なるが、最盛期には７００～８００人になりその８０％は女性である。

この給料は消耗品、交通費、教育費等に支払われ地域経済の活性化に寄与している。

（４）　修理工場

ブングブングプロジェクトを除いて他のプロジェクトは修理工場をもっており、地域の機械センターとしての機能を果し、また技術者の養成にも役立っている。

（５）　食糧自給

ＦＮＤＣは毎年３０００トンのメーズを生産加工し、地域住民及び公的機関に実費で販売している。ミルクについても同様である。このようにしてカバンゴ州住民の生活に大きく貢献している。

（６）　地域産物の市場の創設

１９８８年にカバンゴでは粟の生産が良かったが、オワンボでは旱魃により収穫が悪かったので、ＦＮＤＣではカバンゴの粟を購入しオワンボに輸出した。１９８９年には状況は異なったが市場のインフラストラクチャーを設立する為にやはりＦＮＤＣは粟を購入した。このようにしてＦＮＤＣは市場開発に貢献している。

カバンゴ州は夏は高温で、土壌は砂質で保水力に乏しく降雨量も小さい。このような所の農業は高度な営農、潅漑施設と熟練した農民が必要とされる。加えて電力、農業インプットが十分でない。従って現在は農場経営に経費の上で問題もあるが、カバンゴにおける自給率の向上、農民へのサービス向上の上でＦＮＤＣは大きな役割を果さねばならない。将来は農民支援センターの設立が考えられている。その前段として土壌が比較的良い東部の農場開発が急務である。

７．　オワムボ州農業総合開発計画

オワンボ州はナミビアの中央北部に位置し、北はアンゴラに接している。

人口密度は５０人／㎢で、ナミビアでは最も高く、第一党である南西アフリカ人民機構（ＳＷＡＰＯ）の地盤でもある。　地下水は塩分が強く飲料水にも潅漑用水にも適さない。従って用水は、州の西北端を流れるクネネ川から揚水し道路沿いに敷設されたパイプラインによって運ばれる水だけである。土壌は殆どがアルカリ性が強く耕作に適さない。農業は養鶏、養蛙、酪農。グアバ、粟、水耕栽培等が行われているが、畜産以外は余り盛んではない。

クネネ川からの揚水はアンゴラとの協定で１８５百万立法米／年の取水権を得ているが、現在の人口、家畜数では年間使用量は８５百万立法米／年で足りるので、１００百万立法米／年は潅漑に利用可能である。

本地域は耕作農業には自然条件が厳しいが、ナミビア北部農業地帯の一部として、人口集中地帯として、また国境地帯としての重要性を考えれば農業開発は欠かすことは出来ない。

8．　総合所見

（1）　リアムベジ湖の回復は周辺農業農村開発の上で必要不可欠であり、またリアムベジ湖の回復計画を策定する上で周辺農業農村開発計画の策定は必要不可欠である。ナミビア政府は独立移行期間内の実施や現地の実態から計画の緊急性を主張したが、リアムベジ湖周辺農業農村開発マスタープランの策定の上でブカロ水路のフィージビリティースタディを実施することの必要性、有利性を提言し、了解を得る事が出来たので、要請書案を作成した。

（2）　東カプリビ州米生産促進計画

米生産促進計画地域として現地ではイシズの外にカサヤ地区等を考えているが、資金や技術不足の現状を考慮すれば、今、水田を拡張する事は得策ではない。既存の３２ｈａの水田を活用して技術の開発、研修及び普及を行うことが必要である。

既存の水田、施設を技術の開発、研修、普及に利用出来るよう改修整備し、同時に技術協力を要請するよう提言した。

（3）　リニヤンティ潅漑農場拡張計画

東カプリビ州はナミビアの中でも他の州とは自然条件、社会条件とも異なった州で、最も農業に適している。将来はナミビアの食糧供給基地として重要な州である。従って東カプリビ州農業開発センターの設立が有力であり、その基地としてリニヤンティ農場が考えられる。そのための拡張計画が考えられるが、前二者のプロジェクトに比べればその優先度は劣る。

（4）　カバンゴ州東部農業開発計画

ナミビアの重要な農業地帯であるナミビア北部の中央に位置し、ＦＮＤＣは作物の多様性、酪農、綿花生産と加工、市場開発等に力を注ぎ、農民支援センターの設立を目指している。その前段として自然条件、土壌条件等が良いカバンゴ東部の農場拡張が有力かつ緊急である。

（5）　オワンボ州農業農村開発計画

社会、政策的には最も重要性、緊急性の高い地域であるが、自然条件、土壌条件、特に水資源に恵まれず畜産に偏った農業開発にならざるを得ない。限られた水資源の中で地下水利用の可能性も含めた農業農村開発計画を策定する必要があり、マスタープランの策定が必要である。

9． 添付資料

（1） 面会者名簿

ウインドホウク

MR.DE KLER	農業水産水利農村開発省 農業局長
MR.PEDRO MARITZ	農業水産水利農村開発省 水利局書記
MR.PIET HEYNS	農業水産水利農村開発省 調査研究局長
MR.G.C.VAN DYK	FNDC 開発センター総局長
MR.CHARUE DU TOIT	FNDC
久木田 純 氏	UNICEF

カティマ ムリロ

MR.NEVILLE ANGERMUND	東カプリビ州知事
MR.KENNETH M.SIBOLILE	農業水産水利農村開発省 農業局 カティマ ムリロ事務所長
MR.L.W.SITWALA	農業水産水利農村開発省 農業局 カティマムリロ事務所
MR.HENNIE LIEBENBERG	FNDC カティマ ムリロ事務所長
MR.BEAU SPARROW	FNDC
MR.BOB MEIRING	FNDC ブカロ水路担当
MR.I.M.BARRION	稲作担当 フィリッピン人

カバンゴ

MR.ANDRE D.NIEMAND	FNDC カバンゴ事務所長
MR.MIKA MURONGA	FNDC
MR.HENRY MUDGE	ブングブング農場長
MR.WILLIE VERMEULEN	FNDC ムセセ、シテモ、シャディコンゴロ農場長
MR.FRANCOIS VENTER	FNDC ムセセ農場
MR.FACUSTINUS MONYO MUSHONGA	マシャレ農業大学長

オシャカティ

MR.KEITH MORROW	農業水産水利農村開発省 オワンボ事務所長
MR.DAVID KOTIE	FNDC オシャカティ事務所長

ジンバブエ

在ジンバブエ日本大使館

森野 芳郎 氏	一等書記官

（２）　収集資料

THE NATIONAL DEVELOPMENT STRATEGY OF SOUTH WEST AFRICA

DEVELOPMENT AND INVESTMENT (FNDC)

INFORMATION FOR INVESTORS (FNDC)

STATISTICAL ECONOMIC REVIEW (THE DEPARTMENT OF FINANCE)

PRESENTED AT THE DONOR CONFERENCE (1990年4月)

ISIZU RICE PROJECT FEASIBILITY REPORT (FNDC)

FIRST NATIONAL DEVELOPMENT CORPORATION ANNUAL REPORT 1989

GEOLOGICAL SERVEY (DEPARTMENT OF ECONOMIC AFFAIRS 1990年5月)

THE GEOLOGICAL SURVEY OF SOUTH WEST AFRICA/NAMIBIA

MANIFACTURING INDUSTRY SURVEY 1989 (DEVELOPMENT OF ECONOMIC AFFAIRS/NAMIBIA)

HOUSEHOLD EXPECTURE 1985 (DIRECTORA:DEVELOPMENT CO-ORDINATION)

MAN-POWER SURVEY 1988　(DEVELOPMENT OF ECONOMIC AFFAIRS)

STATISTICS OF SCHOOLS (DIRECTORATE:DEVELOPMENT CO-ORDINATION 1983,1984,1985),

(1983~86),(1984~87),(1985~88),(1986~89)

POPULATION CENSUS 1981

地図

GEOLOGICAL MAP 1980　1/1,000,000 (4枚組み)

地形図　1/1,000,000

　　1/250,000　ナミビア北部

　　1/50.000　東カプリビ州

（３）　調査工程表

９月１７日（月）　成田発　パリ着
１８日（火）　パリ発
１９日（水）　ヨハネスブルグ着
２０日（木）　ヨハネスブルグ発　ウインドホウク着
農業水産水利農村開発省水利局、農業局、及び第一国家開発公団（ＦＮＤＣ）表敬訪問、打ち合わせ
２１日（金）　ＦＮＤＣと打ち合わせ
２２～２３日（土、日）　資料収集、整理
２４日（月）　ヨハネスブルグ発　カティマムリロ着
農業局事務所及びＦＮＤＣと打ち合わせ
イシズ地区、カティマ農場、リアンベジ湖、リニヤンティ農場現地踏査
２５日（火）　コパノ農場現地踏査
カティマムリロ発　ルンド着
農業局事務所、ＦＮＤＣと打ち合わせ
ブングブング酪農工場現地踏査
２６日（水）　ムセセ農場、マシャレ農業大学現地踏査
２７日（木）　ＦＮＤＣと打ち合わせ　　綿花加工場現地踏査
ルンド発　ツメブ着
２８日（金）　ツメブ発　オシャカティ着
農業局事務所、ＦＮＤＣと打ち合わせ
ルアカナポンプ場、オルサンジェダム、オゴンゴ浄水場現地踏査
２９～３０日（土、日）　資料整理、要請書案作成
１０月　１日（月）　オシャカティ発　ウインドホウク着　資料整理
２日（火）　農業水産水利農村開発省農業局、水利局、ＦＮＤＣと打ち合わせ
３日（水）　ウインドホウク発　ヨハネスブルグ着
４日（木）　ヨハネスブルグ発　ハラレ着
日本大使館表敬訪問、打ち合わせ
５日（金）　資料整理
６日（土）　ハラレ発
７日（日）　ロンドン着

8日（月）　　ロンドン発
9日（火）　　成田着

調査団

山田　　稔美　　農業土木
昭和　5年　4月16日生　　国際航業　（株）　技師長

田島　　正広　　農業土木
昭和22年　6月23日生　　国際航業　（株）

REQUEST FOR TECHNICAL ASSISTANT PROJECT

Project Title : Agricultural and Rural Development Project Arround Liambezi Lake

Requesting Agency : Ministry of Agriculture,Fisheries,Water and Rural Development First National Development Corpolation (FNDC)

Proposed Source of Assistance : Government of Japan

I Background

I-1.Namibia

The greater part of the Namibia's 823 thousand sq.km lies between latitudes 18° and 28° South and longitude 14° and 21° East. It is bordered by the Atlantic Ocean on the west, by Angola on the north, by Zambia on the north-east, by Botswana on the east and by South Africa on the south.

The Namibia has four district natural regions: the 80-120 km wide belt of Namib Desert stretching along the entire coastline; the semi-arid mountainous plateau-varying in altitude from 1000 to 2000m which covers the central part of the interior, the low-lying north-eastern and south-eastern areas which are extensions of the dry Kalahari and Karoo regions of Botswana and South Africa; and the bush-covered plains to the north of the Etosha Pan,including the fairly high rainfall areas of Kavango and Eastern Caprivi.

Although the greater part of the country lies north of the Tropic of Capnicom, the climate is typical of a semi-desert country, that is, with hot days and cool nights. Temperatures in midsummer may rise above 40°C; during winter the days are agreeably warm although there is often a drop to below

freezing point at dawn. The interior of the country has two rainy seasons, one short and one long. The short rains may fall any time between October and December, the main rainfall period, when fairly frequent thunderstorms may be expected, occurs between mid-January and April. Dry and cloudless conditions mark the rest of the year.

Namibia's total population amounts 1,262 thousand, given one of the lowest population density figures in the world, 1.5 persons per sq. kilometre.

Namibia's economy is characterised by its complex nature in that its economic activities range from a traditonal hunter-gatherer subsistence economy to the high technology of a modern industrialised sector. The economy's productive capacity is based mainly on its mining sector, agriculture and fishing. Thease account for approximately 40% of the gross domestic product(GDP) and 90% of total merchandise exports. Subsistence agriculture involves approximately half of the population, and its productive activity, although this is not yet incorporated in the national accounts, is estimated at 5% of the GDP.

To achieve a larger degree of economic autonomy Namibia needs to reduce its dependence on South Africa by establishing an overall national developmemt strategy and creating a system of secondary economic activities. It needs to upgrade the value of its minerals through beneficiation, promote food production through irrigated smalholder agriculture, for which the north of the country is ideally suited, and introduce a certain amount of protection for its secondary industries against under competition from South Africa.

Although the agricultural contribution to the GDP is approximately 10%, some 70% of the population depend on agricultural activities for their livelihood. The commercial agricultural sector itself accomodates 16% of the total labour force whilst in certain communal areas up to 90% of the population are engaged mainly in subsistence forming.

Predominantly stock farming(cattle,sheep and goats) and dryland cropping are carried out with a little dairy and pig farming, small ares of irrigation farming, and some forestry activity. Development of agriculture is hampered by a lack of farming infrastructure and potable water which can only be alleviated by the provision of expensive canal or pipeline systems.

Two important features characterize the agricultural sector of Namibia namely the skewed distribution of land, on the one hand and, on the other the predominance of livestock and the relatively minor role played by crop production. Such a situation, in a context of a rising rate of unemployment increasing hunger in the rural areas and extremely low self-sufficiency rate of foods, needs to be urgently addressed.

I-2. Eastern Caprivi

Eastern Caprivi is located between Botswana in the south and Angola and Zambia in the north. On the western side it is bordered by the Cuando River, whilst the Zambezi River constitute the eastern boundry. The altitude of the study area of 900m-1000m above sea level, contributes towards reduced temperatures with the result that sub-tropical climatic conditions prevail. The average annual precipitation is approximately 700mm falling almost exclusively during the period November to April.

Because of its location where is farest from the center of Namibia and in inferior conditions of communication, development of this area is still inferior. In order to develop such area, a development of unique products is effective.

On the other hand, the area is blessed with water resources and soil condition. Rice, sugar production, tabacco, fruits, vegetables, fisheries and so on are given attention.

The Liambezi Lake plays very important role in the development of the southern part of the Eastern Caprivi Region and the area along the natural channel (Bucalo Channel)

connecting between the lake and the Zambezi River. At 7.5m (based on a temporary bench mark) of the water level of the Zambezi River, the water flowes into the lake by gravity and used for village use and livestocks. Since 1985, however, the lake has dried up. If this situation will continue,the villagers will move to other places and this area will be devasated.

Therefore, driving water to the lake from the Zambezi River is urgently necessary for development of this area and for recovering the Eastern Caprivi's economic and social structure which was deranged by the last war.

Ⅰ Objectives of The Study

The objectives of the study are to formulate a master plan of the integrated agricultural and rural development in the study area and to conduct a feasibility study of the Bucalo Channel Project. In this study, comprehensive water resources development programs are to be reviewed and developed with possible agricultural rural development projects to be identified and evaluated. The following points will be taken into consideration;

1) Effective use of the water resources for irrigation, village use, livestock and fisheries
2) Increase of agricultural production
3) Creation of employment opportunities
4) Rural development with the promotion of processing industries and social infrastructure, and
5) Increase in per capital income by expanding agricultural land and improving farming systems.

Ⅱ Study Area

The study area is all area where will be able to be developed by the most economic development plan of the Liambezi Lake. It includs not only areas arround the lake but also areas along the proposed Bucalo Channel.

Ⅳ. Scope of The Study

1. The Study consists of two phases.

1-1. In the first phase, the Master Plan of the Integrated Agricultural and Rural Development Project is formulated, which comprises a study on water resources development plan of the Liambezi Lake and the agricultural development plan consisting of such items as irrigation and social infrastructure, and possible agricultural rural development projects to be identified and grouped by priority.

1-2. In the second phase, a feasibility study on the Bucalo Channel Project is conducted.

2. Study items

2-1. Phase 1

2-1-1. Data collection and field survey

To collect and review available data and information relevant to the study and to carry out a field survey on the following items:

1) Natural conditions

a. Topography
b. Geography
c. Meteorology
d. Hydrology
e. Water resources (including irrigation water requirement estimation,villege use and livestock and fisheries use)
f. Geology
g. Soil
h. Satelite image analysis and areial photo interpretation

2) Social conditions

a. Demographic characteristics
b. Social organization
c. Socio-economy
d. Employment
e. Income level and distribution
f. Education

g. Others

3) Agriculture

a. Farming

b. Land use/tenure (including farm size distribution)

c. Cropping patterns

d. Agricultural organization (support services and extention services)

4) Agro-economy

a. Farm economy

b. Farmers' organization

c. Farm inputs and productivity

d. Credit

e. Farm machinery

f. Marketing system

5) Agricultural infrastructure

a. Irrigation-drainage systems and diversion schemes

b. Operation and maintenance of the existing irrigation systems

c. Others

6) Social infrastructure

a. Rural roads

b. Electricity

c. Water supply

d. Others

7) Mapping and youte surveying

2-1-2. To conduct a study based on the results of the above-mentioned survey.

2-1-3. To identify projects and put them in priority order,

2-1-4. To formulate the Integrated Agricultural and Rural Development Project.

2-1-5. To estimate appropriate project costs and benefits.

2-1-6. To evaluate the project.

2-1-7. Recommendation

2-2 Phase 2

A feasibility study on the Bucalo Channel project is conducted by the following measures.

2-2-1. To conduct supplementary data collection and field survey.

2-2-2 To conduct topographic survey for major structures.

2-2-3. To formulate the Project.

2-2-4. To formulate a preliminary design of the major structures.

2-2-5. To prepare the implementation schedule.

2-2-6. To estimate the project costs and benefits.

2-2-7. To evaluate the project.

2-2-8. Recommendation

Ⅴ Study Schedule

The Study will be executed in accordance with the following tentative schedule.

Tentative Schedule

Item\Month	1 3 5 7 9 11 13 15 17 19 21 23
WORK IN NAMIBIA	——— ——— —
WORK IN JAPAN	——— ———
PHASE	PHASE 1 PHASE 2

Ⅵ Fellowship

Government of Japan shall recieve personnel connected with the study for technical training in Japan in accordance with the normal procedure under the JICA Technical Cooperation Schema.

Ⅶ Counterpart Contribution

Government of Namibia will provide the necessary and qualified engineering staff so that the team be able to proceed the work as smoothly during the period of the work.

REQUEST FOR TECHNICAL COOPERATION PROJECT

Project Title :Promotion of the Rice Production Project in the Eastern Caprivi Region

Requesting Agency :Ministry of Agriculture, Fisheries, Water and Rural Development
First National Development Coperation (FNDC)

Project Type :Technical Cooperation

Proposed Source of Assistance :Government of Japan

Ⅰ. Background

Ⅰ-1. Namibia

The greater part of the Namibia's 823 thousand sq.km lies between latitude 18° and 28° South and longitude 14° and 21° East. It is borered by the Atlantic Ocean on the west,by Angola on the north,by Zambia on the north-east,by Botswana on the east and by South Africa on the south.

Namibia has four district natural regions:

(a) the 80 to 120 km wide belt of Namib Desert stretching along the entire coastline;

(b) the semi-arid mountainous plateau, varying in altitude from 1000 to 2000m which covers the central part of the interior;

(c) the low-lying north-eastern and south-eastern areas which are extensions of the dry Kalahari anroo regions of Botswana and South Africa respctively;

(d) the bush-covered plains to the north of the Etosha Pan, including the fairly high rainfall areas of Kavango and Eastern Caprivi.

Although the greater part of the country lies north of the

Tropic of Capricorn, the climate is typical that of a semi-

desert country, namely hot days and cool nights. Temperatures in midsummer may rise above 40°C, while during winter the days are agreeably warm, although there is often a drop to below freezint at dawn.

The interior of the country has two rainy seasons, one short and one long. The short rainy period may occur any time between October and December, while the main rainfall period occurs between mid-January and April, when fairly frequent thunderstorms may be expected. Dry and cloudless conditions mark the rest of the year.

Namibia's total population amounts to 1.3 million - one of the lowest population density figures in the world: 1.5 persons per sq. kilometre.

Nanibia's economy is characterised by it's complex nature in that it's economic activities range from a traditional hunter-gatherer subsistence economy to the high technology of a modern industrialised sector. The economy's productive capacity is based mainly on it's mining sector, agriculture and fisheries. These account for approximately 40% of the gross domestic product(GDP) and 90% of total merchandise exports. Subsistence agriculture involves more thanhalf of the population and it's productive activity is estimated at 5% of the GDP (at present not yet incorporated in the national accounts).

To achieve a larger degree of economic autonomy, Nanibia needs to reduce it's dependence on South Africa. This can be achieved by establishing an overall national development strategy and creating a system of secondary economic activities. It needs to upgrade the value of it's minerals through beneficiation, promote food production through irrigated smallholder agriculture(for which the of the country is ideally suited) and introduce a certain amount of protection for it's secondary industries against competition from South Africa.

Although the agricultural contrivution to the GDP is about

10%, some 70% of the population depend on agricultural activities for their livlihood. The commercial agricultural serctor itself accommodates 16% of the total labour force, whilst in certain communal areas up to 90% of the population are engaged mainly in subsistence farming.

The maivity of the farming sector in Namibia is stock farming (cattle,sheep and goat), while dryland cropping also has a significant contribution. The rest of the activities consist of a little dairy and pig farming, small areas of irrigation farming and some forestry activity. Development of agriculture is hampered by a lack of farming infrastructure and potable water, which can only be alleviated by the provision of expensive canal or ipeline systems.

The two important features of the agricultural sector in Namibia are the dual farming system and the predominance of livestock farming in relation to the minor role of crop production. In the context of a rising rate of unemployment, increasing hunger in the rural areas and an extremely low self-sufficiency rate of food production, this situation urgently needs to be addressed.

I-2. Eastern Caprivi Region:

Eastern Caprivi is located between Botswana in the south and Angola and Zambia in the north. This region is bordered by the Zambezi River in the north and east, by the Liniyanti River and Chobe River in the south and the Kwando River in the west. The altitude of this region (900 m to 1000 m above sea level) contributes towards reduced temperatures, with the result that sub-tropical climatic conditions prevail. The average annual precipitation is approximately 700 mm, falling almost exclusively during the period November to April.

The present development status of the Eastern Caprivi Region is still low, because of it'remoteness from the center of Namibia and it's inferior communication facilities/structure. In order to develop such a region, the introduction of unique

products will have the most effect.

Whilst this region is blessed with water resources and suitable soils, the production of rice, sugar, tobacco, fruit, vegetables, fish etc. is already receiving attention. With reference to rice production, the demand for rice in Namibia is increasing, with a substantial demand in surrounding countries.

A sc part of the Eastern Caprivi Region is particularly suitable for rice production, because of an annual rainfall of 700 mm, blessed water resources from bordering rivers and fertile claysh, sandy soil brought by floods from the Zambezi River. According to on farm experiments, production of up to eight tons per hectare were achieved.

In the Isize Rice Production Project Area about 4000 ha of potential paddy fields were identified, with additional potential in the Kasaya Project Area and around the Liambezi Lake. With all this in mind, the Isize Rice Production Project was compiled and part of the project (32 ha) was constructed. The initial favourable results are now hampered by a shortage of technology, machinery and funds; thus the project cannot continue.

Ⅰ Objectives of the Project

Ⅰ-1. Short-term Objectives

(a) to upgrade the constructed paddy fields, facilities and machinery in order to make the transfer of technology as easy as possible

(b) to find the most suitable nology, facilities and equipment for local conditions

(c) to transfer water management technology to farmers

(d) to demonstrate the production of rice to farmers

Ⅰ-2. Medium and Long-term Objectives

(a) to expand the paddy fields in the Isize Project Area to the planned 4000 ha, and also to construct paddy fields in other suitable areas of the Eastern Caprivi Region.

(b) to transfer rice production management technology to farmers

Ⅱ-3. Describe fully the relations between the Project and Objectives, and how the Project will contribute to the accomplishment of the Objectives;

The Regional Office of the FNDC is executing the Isize Rice Production Project, but there is a lack of knowledge pertaining to how exactly to produce rice. Accordingly some facilities, machinery and equipmemt are not suitable for rice production and need improvement. In this regard a Technical Cooperation Team is requested to transfer the technology of rice production.

Ⅲ Requested Technical Cooperation

Th lowing experts in the field of rice production are requested:

(a) Team leader:	1
(b) Agronomists:	2
(c) Irrigation engineer:	1
(d) Machinery specialist:	1

Ⅳ Project Duration

Six years

Ⅴ. Benefit, Efect and Publicity of the Project

Ⅴ-1. Population that will benefit directly from the Project

The population of the Eastern Caprivi will benefit directly from the Project (about 56000 people, that is 3.7% of the total population of Namibia).

Ⅴ-2. Population that will benefit indirectly from the Project

The entire population of Namibia will benefit indirectly by means of locally produced food and the stimulation of the national economy.

Ⅴ-3. Area that will benefit from the Project

Currently 32 ha in the Isize Rice Production Project Area, but other sites along rivers and lakes in the same Region are also identified.

Ⅴ-4. Economic and social effects of the Project

(a) Current situation

The economy of the Eastern Caprivi Region was dependent on the South African Defence Force war. Accordingly, after the war, widespread unemployment occurred and the economic structure is deranged. Only subsistence farming (mainly stock farming) is currently practised.

(b) Expeffect of the Project

The Project is expected to transfer the technology of rice production, to demonstrate the benefit thereof and to extend paddy fields to the potential areas. It will also increase farmers' income and employment opportunities, as well as contribute to both the regional and the national economy.

Ⅴ-5. Publicity

The Project site is near Katima Mulilo, the capital of the Eastern Caprivi Region. It is expected that the whole population of the Region will notice the benefits and positive effect of the Project.

Ⅵ Request for Other Technical Cooperation

No.

Ⅶ Ministry in Charge of the Project

The new Namibian Government attaches a high priority to the

intensified development of the less developed communal areas in the country.

The Ministry of Agriculture, Fisheries, Water and Rural Development is inter alia responsible for governmental functions concerned with an increase in agricultural production and the upgrading of socio-economic conditions in rural areas.

To address the need for development in these communal areas, the Eastern Caprivi Region in this case, the continuation of the Rice Production Project is of a high priority.

REQUEST FOR JAPAN'S GRANT AID

Applicant	Project Title
The Government of Namibia	Promotion of The Rice Production Project in the Eastern Caprivi Region
Economic Sector	Project Type
Agriculture	1. Facilities Construction 2. Equipment Supply
Responsible Ministry	Implementing Agency
Agriculture, Fisheries,Water and Rural Development	First National Development Corporation (FNDC)

I Project Description

1. Background

1.1. Current Situation of the Sector

The second most important sector of Namibia's economy is agriculture. In 1988 it contributed 10.5% to the gross domestic product (GDP); the major portion being derived from stock farming. Although the agricultural constribution to the GDP is 10.5% ,some 70% of the population depend on agricultural activities for their livelihood, whilst in certain communal areas up to 90% of the population are engaged mainly in subsistence farming.

Although agricultural activity has expanded in recent years, it is insufficient for the local demand and consequently Namibia is still largely dependance on South Africa for pork (60%), broilers (90%), eggs (40%), vegetables (80%) and the major grains, namely white maize (73%), yellow maize (47%) and wheat (85%). All agricultural machinery and production inputs are also imported. With the exeption of beef, hardly any agricultural raw materials are currently processed in Namibia.There are three types of land tenure in Namibia: Government land (15%), consisting mainly of the diamond areas and nature reserves, tribal owned or traditional communal areas (41%) and privately owned land (44%), which is called

the commercial farming regions.

The communal areas of 33 million hectares are, due to lack of surface water and farming infrastructure, under utilisedin certain ares, while in other areas they are alarmingly over utilised. These main areas of low utilisation are situated in the North and East of the country.

1.2. Problems to be solved in the Sector

The problems to be so;ved in the Sector are:

(a) improvement of the extremely low rate of food-self-sufficiency and reduction of dependence on imports.

(b) improvement of economic situation in the northern part of Namibia which is deranged by the last war.

(c) increase of farmers' income by construction of agricultural infrastructure, extension of farming technology, introduction of suitable equipment and facilities, and divercification from the subsistence farming to commercial farming.

(d) increase of employment opportunities

1.3. Necessity and importance of improvement in the Sector which lead to the formulation of the Project

To achieve a larger degree of economic autonomy, Namibia needs to reduce it's dependence on South Africa by establishing an overall national development strategy and creating a system of secondary economic activities. In the agricultural section it needs to promote food production through irrigated smallholder agriculture, for which the north of the country is ideally suited.

The next problem is a situation of glaring poverty and widespread unemployment among the majority of the population. The per-capita income of 55% of the population, which is supported by traditional economy, was only US$ 63. Agricultural development in areas with promising potential will contribute to the improvement of this situation.

1.4. Relations between the Sector and the Project

The highest potential for irrigated farming is found in the

Eastern Caprivi Region, which is bordered by the Zambezi River in the north and east, by the Liniyanti River and Chobe River in the south and the Kwando River in the west. Over and against this, the Region is blessed with an annual rainfall of 700 mm.

In spite of this blessing, the Region has inferior communication conditions and it is situated far away from the center of Namibia. The development of the Region as a whole still needs much attention. The production of unique agricultural products suitable to the natural conditions, will largely contribute to the uplifting of living standards.

The demand for rice in Namibia is increasing and so is the demand in surrounding countries. There are a limited number of places with favourable conditions for rice growing in Africa. With this in mind, the production of rice in the Eastern Caprivi Region has been given attention to such an extent that the Isize Rice Production Project was compiled and part of the project (32 ha) was constructed. The initial favourable results are now hampered by a shortage of technical and management skills as well as proceed with the project.

The Government of Namibia decided to forward a request for the technical cooperation and upgrading of the constructed paddy fields in the Isize Rice Production Project to the Government of Japan.

1.5. Reasons why Japan's Grant Aid is requested for this particular Project

Paddy fields of 32 ha have been constructed, but the lack of technical and management skills as well as funds terminated the project. It is clear that the rice production will make a large contribution to the rural economy and that the area is suitable for rice growing. While the technology for rice production is highly developed in Japan, this country is requested to support Namibia in carrying out this important project.

2. Objectives and Outline of the Project

2.1. Objectives od the Project

(A) Short-term objectives

The short-term objectives are;

(a) to expand and to upgrade the constructed paddy fields, facilities and machinery to a minimum scale that can achieve technical and economic viability.

(b) to find the most suitable technology, facilities and equipment for local conditions.

(c) to develop the production process of.rice so that the project can operate financially independent.

(d) to transfer water management technoloo fermers

(e) to do counterpert training of local participants in order to enable Namibians to proceed with the operation independently.

(B) Medium and long-term objectives;

The medium and long-term objective is to expand the paddy fields in the Isize Project Area to the planned 4000 ha, and also to construct paddy fields in other suitable areas of the Eastern Caprivi Region.

(C) Describe fully the relations between the Project and Objectives, and how the Project will contribute to the accomplent of the Objectives;

The Regional Office of the FNDC is executing the Isize Rice Pilot Project, but there is a lack of technics and management knowledge and funds pertaining to how exactly to expand the project. Accordingly technology and management skills are needed to proceed the project. In this regard a Technical Cooperation Team is requested to transfer the technology and management of rice production.

2.2. Outline of the Project

The 32 ha of paddy field, a small office, a storehouse, a garage and a floating pump station have been constructed. In addition to this two handtradtors, a tractor with attachments, a pump, a harvestor and a rice-mill machine are installed.

2.3. Location plan of each facility and/or equipment

The facilities and machinery are described in the next item (2.4. Cost estimation).

All the facilities and equipment are located in the Isize Rice Production Project Area about 25 km east of Katima Mulilo, the capital eEastern Caprivi Region.

2.4. Cost estimates

Rehabilitation of the paddy field (32 ha)			
Farm land consolidation including leveling			
32 ha X R 400		R	12,800
Rehabilitation of canals			20,000
Building (office room 4, training room 1, labolatory 1, others)			4,000,000
Vehcles micro bus 1			100,000
jeep 2			100,000
Agricultural machineries			
tractor with attachments	1		1,000,000
hand tractor with attachments	3		200,000
Equipments for training	1 set		100,000
Equipments for labolatory	1 set		100,000
Others			67,200
Total		R	5,700,000
(exchanging rate: R1= ¥ 55)		¥	313,500,000

3. Benefit, Effect and Publicity of the Project

3.1. Population that will benefit directly from the Project

The population of the Eastern Caprivi will benefit directly from the Project (about 56,000 people, that is 3.7% of the total population of Namibia).

3.2. Population that will benefit indirectly from the Project

The entire population of Namibia will benefit indirectly by means of locally produced food and the stimulation of the national economy.

3.3. Area that will benefit from the project

Currently 32 ha in the Eastern Caprivi Region are involved,

but other sites along rivers and lakes in the same Region are also identified.

4. Economic and Social Effect of the Project

(A) Current situation

The economy of the Eastern Caprivi Region was dependent on the South Africa Defence Force war. Accordingly, after the war, widespread unemployment occurred and the economic structure is deranged. Only subsistence farming (mainly stock farming) is currently practised.

(B) Expected effect of the Project

The Project is expected to transfer the technology of rice production, to demonstrate the benefit thereof and to extend paddy fields to ptential areas. It will also increase farmers' income and employment opportunities, as well as contribute to both the regional and the national economy.

3.5. Publicity

The Project site is near Katima Mulilo, the capital of the Eastern Caprivi Region. It is expected that the whole population of the Region will notice the benefits and positive effect of the Project.

4. Request to Other Donors

No.

5. Ninistry in Charge of the Project

The new Namibian Government attaches a high priority to the intensfd development of the less developed communal ares in the country.

The Ministry of Agriculture, Fisheries, Water and Rural Development is inter alia responsible for governmental functions concerned with an increase in agricultural production and the upgrading of socio-economic conditions in rural areas.

To address the need for development in these communal areas,

the Eastern Caprivi Region in this case, the continuation of the Rice Production Project is of a high priority.

REQUEST FOR TECHNICAL ASSISTANT PROJECT

Project Title : Eastern Caprivi Integrated Agricultural and Rural Development Project

Requesting Agency : Ministry of Agriculture, Fisheries, Water and Rural Development

Proposed Source of Assistance : Government of Japan

I Background

The greater part of the Namibia's 823 thousand sq.km lies between latitudes 18° and 28° South and longitude 14° and 21° East. It is bordered by the Atlantic Ocean on the west, by Angola on the north, by Zambia on the north-east, by Botswana on the east and by South Africa on the south.

The Namibia has four district natural regions: the 80-120 km wide belt of Namib Desert stretching along the entire coastline; the semi-arid mountainous plateau-varying in altitude from 1000 to 2000m which covers the central part of the interior, the low-lying north-eastern and south-eastern areas which are extensions of the dry Kalahari and Karoo regions of Botswana and South Africa; and the bush-covered plains to the north of the Etosha Pan, including the fairly high rainfall areas of Kavango and Eastern Caprivi.

Although the greater part of the country lies north of the Tropic of Capnicom, the climate is typical of a semi-desert country, that is, with hot days and cool nights. Temperatures in midsummer may rise above 40°C; during winter the days are agreeably warm although there is often a drop to below freezing point at dawn. The interior of the country has two rainy seasons, one short and one long. The short rains may fall any time between October and December, the main rainfall

period, when fairly frequent thunderstorms may be expected, occurs between mid-January and April. Dry and cloudless conditions mark the rest of the year.

Namibia's total population amounts 1,262 thousand, given one of the lowest population density figures in the world, 1.5 persons per sq. kilometre.

Namibia's economy is characterised by its complex nature in that its economic activities range from a traditonal hunter-gatherer subsistence economy to the high technology of a modern industrialised sector. The economy's productive capacity is based mainly on its mining sector, agriculture and fishing. Thease account for approximately 40% of the gross domestic product(GDP) and 90% of total merchandise exports. Subsistence agriculture involves approximately half of the population, and its productive activity, although this is not yet incorporated in the national accounts, is estimated at 5% of the GDP.

To achieve a larger degree of economic autonomy Namibia needs to reduce its dependence on South Africa by establishing an overall national developmemt strategy and creating a system of secondary economic activities. It needs to upgrade the value of its minerals through beneficiation, promote food production through irrigated smalholder agriculture, for which the north of the country is ideally suited, and introduce a certain amount of protection for its secondary industries against under competition from South Africa.

Although the agricultural contribution to the GDP is approximately 10%, some 70% of the population depend on agricultural activities for their livelihood. The commercial agricultural sector itself accomodates 16% of the total labour force whilst in certain communal areas up to 90% of the population are engaged mainly in subsistence forming.

Predominantly stock farming(cattle,sheep and goats) and dryland cropping are carried out with a little dairy and pig farming, small ares of irrigation farming, and some forestry

activity. Development of agriculture is hampered by a lack of farming infrastructure and potable water which can only be alleviated by the provision of expensive canal or pipeline systems.

Two important features characterize the agricultural sector of Namibia namely the skewed distribution of land, on the one hand and, on the other the predominance of livestock and the relatively minor role played by crop production. Such a situation, in a context of a rising rate of unemployment and increasing hunger in the rural areas, needs to be urgently addressed.

Thus the priority sectors identified are agriculture and rural development, education, health and housing.

Objectives of The Study

The objectives of the study are to formulate a master plan of the integrated agricultural and rural development in the study area and to conduct a feasibility study of the top priority project in the master plan. In this study, comprehensive water resources development programs are to be reviewed and developed with possible agricultural rural development projects to be identified and evaluated. The following points will be taken into consideration;

1) Effective use of the water resources including groundwater for irrigation, village use and livestock
2) Increase of agricultural production
3) Creation of employment opportunities
4) Rural development with the promotion of processing industries and social infrastructure, and
5) Increase in per capital income by expanding agricultural land and improving farming systems.

Ⅲ. Study Area

Eastern Caprivi is located between Botswana in the south and Angola and Zambia in the north. On the western side it is bordered by the Cuando River, whilst the Zambezi River constitute the eastern boundry. The altitude of the study area of 900m-1000m above sea level, contributes towards reduced temperatures with the result that sub-tropical climatic conditions prevail. The average annual precipitation is approximately 700mm falling almost exclusively during the period November to April.

Ⅳ. Scope of The Study

1. The Study consists of two phases.

1-1. In the first phase, the Master Plan of the Integrated Agricultural and Rural Development Project is formulated, which comprises a study on water resources development plan, and the agricultural development plan consisting of such items as irrigation and social infrastructure, and possible agricultural rural development projects to be identified and grouped by priority.

1-2. In the second phase, a feasibility study on the top priority project area which is selected in the first phase is conducted.

2. Study items

2-1. Phase 1

2-1-1. Data collection and field survey

To collect and review available data and information relevant to the study and to carry out a field survey on the following items:

1) Natural conditions

a. Topography

b. Geography

c. Meteorology

d. Hydrology

e. Water resources (including irrigation water requirement estimation, villege use and livestock use)

f. Geology (including geophysical exploration/electric prospective survey)

g. Soil (including salinity)

h. Satelite image analysis and areial photo interpretation

2) Social conditions

a. Demographic characteristics

b. Social organization

c. Socio-economy

d. Employment

e. Income level and distribution

f. Education

g. Others

3) Agriculture

a. Farming

b. Land use/tenure (including farm size distribution)

c. Cropping patterns

d. Agricultural organization (support services and extention services)

4) Agro-economy

a. Farm economy

b. Farmers' organization

c. Farm inputs and productivity

d. Credit

e. Farm machinery

f. Marketing system

5) Agricultural infrastructure

a. Irrigation-drainage systems and diversion schemes

b. Operation and maintenance of the existing irrigation systems

c. Others

6) Social infrastructure

a. Rural roads

b. Electricity

c. Water supply

d. Others

2-1-2. To conduct a study based on the results of the above-mentioned survey.

2-1-3. To identify projects and put them in priority order, selecting the top priority project.

2-1-4. To formulate the Integrated Agricultural and Rural Development Project.

2-1-5. To estimate appropriate project costs and benefits.

2-1-6. To evaluate the project.

2-1-7. Recommendation

2-2 Phase 2

A feasibility study on the top priority project area is conducted by the following measures.

2-2-1. To conduct supplementary data collection and field survey.

2-2-2 To conduct topographic survey for major structures.

2-2-3 To determine the elements of the development plan for the top priority project based on the analysis of the above-mentioned review and field survey.

2-2-4. To formulate the development plan.

2-2-5. To formulate a preliminary design of the major structures.

2-2-6. To prepare the implementation schedule.

2-2-7. To estimate the project costs and benefits.

2-2-8. To evaluate the project.

2-2-9. Recommendation

Ⅵ Study Schedule

The Study will be executed in accordance with the following tentative schedule.

Tentative Schedule

Item\Month	1 3 5 7 9 11 13 15 17 19 21 23
WORK IN NAMIBIA	——— ——— —
WORK IN JAPAN	—— ——
PHASE	PHASE 1 PHASE 2

Ⅶ Fellowship

Government of Japan shall recieve personnel connected with the study for technical training in Japan in accordance with the normal procedure under the JICA Technical Cooperation Schema.

Ⅷ Counterpart Contribution

Government of Namibia will provide the necessary and qualified engineering staff so that the team be able to proceed the work as smoothly during the period of the work.