

1937

Kenya

No. 38184/3 (Part 1)

SUBJECT. CO 533/483

Soil Erosion

Application for C.D.F. Assistance

Previous

See SFs 142.

Subsequent

Part 2.

G.I.
SOIL EROSION.
Nominal.

1. GOV. KENYA..... 551..... 18.9.37.
Submits, with comments and various Reports, etc., appln.
for a grant of £10,000 & a loan of £24,000 from C.D.F.
to combat soil erosion as indicated.

2. A/COL. SEC..... 3 PN..... 18.9.37.
States that 11 additional copies of (1), and encls.,
are being sent by sea mail.

DESTROYED UNDER STATUTE

On suffix 1

The latest about erosion in Kenya is our despatch of the 23rd June in which we called attention to Sir Frank Stockdale's opinion and to his recommendations for devoting serious attention to the problem of erosion in Kenya. The despatch and the voluminous enclosures reveal a very serious situation in parts of the country. The enclosures are particularly illuminating and show how rapidly damage can be wrought by even a few days' heavy rain.

The Governor in this despatch proposes to extend the intensive surveys which have been made of the worst districts to cover the whole of the Colony, but he does not think it wise to delay action in those areas until plans to cover the whole of Kenya have been prepared. This is obviously sound.

He proposes to set up a Soil Conservation Service with Mr. Maher, who has already been seconded for the job; Mr. Barnes, who is a local engineer and is willing to take it on; and another engineer from the P.W.D. Consideration has been given to the suggestion that Mr. Maher should be sent to study in the United States and Mr. Langridge sent to Basutoland. It is pointed out, however, that it would be difficult to spare them and that as they are in touch with the work which is being done in the States and elsewhere it is doubtful whether any visits would produce compensating

compensating advantage. Accordingly it is suggested that they should stay in Kenya and work towards a scientific attempt at the treatment of an area of about 100,000 acres. Accordingly application is made to the Colonial Development Fund for assistance in two directions. First a free grant of £10,000 a year over two years to carry out the comprehensive scheme to which reference has been made; and the second, for the loan of £24,000 to be repayable over 30 years with interest at 3%. This is for a comprehensive programme over the whole of the Reserve of the Machakos and involves capital expenditure of £3,500 on equipment and tools with an expenditure of £10,250 a year for two years mainly on labour and supervision. It is proposed that the interest and sinking charges of the loan shall be paid by the local Native Council and Government will recover from them in due course.

I would draw attention to paragraph 5 of the despatch in which it is stated that in the settled areas where there are European farmers, such assistance can be kept down to a reasonable limit. The Land Bank is already authorised to make loans for anti-erosion work and the new Conservation Service which is to be set up will give the necessary technical advice. Sir Frank Stockdale had recommended the purchase of two terracing plants to be lent to farmers and the Government is arranging with a commercial firm to carry out trials at a small charge in order to encourage private enterprise.

If

If necessary, legislation will be enacted but the Governor thinks that the position in the settled areas can be controlled without it.

The rest of the despatch deals with the native areas and points out that although the Native Authorities recognise the danger, the apathy of the individual is such that nothing is likely to be done unless Government takes the lead. As pointed out the whole problem is a mixed one. It involves land tenure, native custom, cultivation of crops for export, nutrition and above all the question of overstocking.

Paragraph 10 of the despatch points out that in some places schemes of anti-erosion measures have been ill thought out with the result that they have proved worse than useless so that it is very necessary to make a demonstration on a general scale to show what can be done. Hence the application now submitted.

Paragraph 13 points out the vital necessity of reducing the number of cattle and the proposal is to introduce the compulsory reduction of surplus cattle which will be sold to the meat factory and the unsaleable ones being bought up from a cattle compensation fund.

In paragraph 17 it is stated that the policy at the back of it is to establish agricultural and animal husbandry on a permanent basis, and the Agricultural Department will provide a demonstration small-holding.

It appears from the end of paragraph 16 that the local Native Council is prepared to accept responsibility for interest and redemption charges up to about £1,250 a year for a loan to replace the present annual expenditure of small sums. I have,

of course, no hesitation in advising that the application be submitted to the Colonial Development Advisory Committee and strongly supported. If Kenya had the money to spare then it would be a proper object for local expenditure, but Kenya has not got the money and in view of the requirements of the question of soil destruction I think it can very fairly be contended that a comprehensive experimental programme such as is envisaged is a matter of genuine Imperial development.

Apart from this there may be, and probably will be, some difficulty if attempts are made to reduce native stock. We have always known in the past that the natives regard their cattle and goats as so much currency and the trouble has been to get some way of inducing the natives to part with their animals. The point is tackled in pages 29 and following of Mr. Maher's report. With regard to the cattle he points out that there would be discontent if cattle were to be reduced without compensation. This is not proposed by Government, since it is intended to pay compensation for the cattle which are not sold to Liebig's. The goat question is argued at some length in pages 30, 31 and 32. Mr. Maher points out that goats are beginning to lose their value as currency and is of the opinion that they are not particularly valuable for any other purpose. He suggests drastic measures to reduce the number of goats, but it is curious that nobody appears to have contemplated the creation

creation of a trade in goat skins for export. There is a substantial trade in goat skins from Nigeria and it might be possible to establish a similar trade in Kenya. To do so, however, would be to encourage the perpetuation of the species and, therefore, is not to be recommended.

At the end of his despatch the Governor enquires what would be the prospects of further applications for help from the Development Fund. As to that one must await the result of the present application but as long as Kenya cannot afford to do the work itself I think it quite on the cards that the Committee would be willing to recommend applications for further financial assistance. I do not mince at further length because the despatch and its enclosures really should be read.

? Refer to C. D. A. C. & suggest it
tell Gov. at once that this is being done & suggest
him on this proposal to tackle the matter seriously

J. L. G. Hand
309/37

There seems very little for me to add to Mr. Flood's minute especially in view of Sir F. Stockdale's impending return who will no doubt wish to comment on the despatch and enclosures in the light of his own intimate knowledge of the position.

Speaking with reserve it seems to me that while these proposals obviously merit the fullest support there may be some danger in trying to go too fast. A perusal of Mr. Barnes report which forms the third annexure to the report indicates quite clearly what a large number of practical

problems there are to be solved in connection with erosion control if the problem is to be satisfactorily dealt with. There does not appear to be the least doubt that expenditure at least on the scale envisaged in the despatch will be required but in the early stages it may be better to hasten slowly and to acquire experience both in the technical methods and also in the administrative operations e.g. in the transfer temporary or permanent of considerable sections of population which they entail.

Also I am not sure that I entirely share the view that nothing would be gained by sending Mr. Maher to the U.S.A. to inspect the work in progress there. In tackling a problem of this magnitude the wider the experience that can be brought to bear the better, and it should at least be possible to profit by other peoples mistakes.

Mr. Collett soil erosion officer in Basutoland is at present in the U.S.A. on a similar mission, he will be back in England in December and on his return his opinion on the value of his experience might be sought.

H. Thompson
4. 10. 37

I would certainly send on to the C D A C, and support the application strongly. It is I think sound that they are tackling this in the manner proposed; and the results ought to form a ~~sound~~ good basis for further developments. (The photos are most striking.)

The Comm: will--I have little doubt--be most sympathetic; obviously, the thing should have a value extending much beyond Kenya.

As to the future, there is no harm in asking the Comm: its view--if it is prepared to give any.

My guess is that they will not commit themselves, except to say that they appreciate fully the importance and urgency of the matter; feel that a solid basis of experience is advisable before projects involving heavy expenditure are embarked on; cannot make any promise until they have actual applications before them; but would, on present information, and subject to funds being available, and future schemes commending themselves on their merits, and with reference to a general ^{plan for} attack on the problem on sound and practical lines, be prepared to consider such applications, if submitted. They will, at a guess, desire to hasten slowly here. The fact is that no one knows as yet how the thing can best be tackled; there will almost certainly have to be much "trial and error" before the most practicable methods can be evolved; and, in particular, events will have to show to what extent native interest and support can be evoked, and what methods of compulsion as regards cattle are politically and administratively possible. I'd accept--as far as we are concerned--the local proposals en bloc.

The 6th: October, 1937.

Amplified
5/2/37

Japan, with a reservation about
Mr. Fisher, about whom I rather
agree with Dr. Tensley. It is a
pity that in taking up seriously,
as they are doing, a serious
problem there should be no
one to who can be spared to
study.

Prepare memo: for that ^{ca}
& how it through Sir F. Stokely,
who returns on the day, so that
he can make his comments at
that stage.

I should like the memo: to
reach me so that I can send it
forward without missing the
next meeting (27th Oct.) if that ^{ca} I
suppose Fisher will have to be in
about the 20th.

W.S.

7.10.27 am

This file came to me last night & I
have read through the papers hurriedly.
I am very favourably impressed with the
memorandum prepared by Mr. R.O. Barnes.
It is essentially practical, but there
are a few issues to which further
emphasis should be given. I was able
to gather some quite useful information

- (a) get the name
- (b) review at once to Mr. F. Stoddart
- (c) send the file forward with
for his personal use
before the meeting on Oct. 27th

Old.
13.10 alone

~~REMOVED UNDER STATUTE~~

3. Dep. Gov. Kenya Tel. 178 1-10-37
request qualifications of Barnes to attend to read A.S.A.
Society C.E. instead of A.M.I.C.E.

4. Draft Memorandum.

5. C.D.A.C. 2244 13.10.37

I have now read through all the reports which have been submitted from Kenya with the despatch 551 of Sept. 18th. I had previously seen Mr. Baker's report on the Ukamba Reserve when I was in Kenya and I there indicated the directions in which the future reports of that officer could be improved. The details given on Soil Erosion in my East African report were designed to indicate that the problem should be approached on a somewhat wider basis than that adopted by Mr. Maher in this his first report and to direct attention to the necessity for improved methods of agriculture being introduced and fostered pari passu with the anti-erosion measures which it was determined were necessary to safeguard the loss of further soil. Mr. Maher's report on the Kamasia, Njemp and East Suk Reserves is a much better document than his report on the Ukamba.

Ukamba. It gives a good picture of the present position there although from what I saw of the work of Mr. Langridge, the Reconditioning Officer there, I formed a much more favourable opinion of the results of this officer's work than has Mr. Maher. The figures given to me by Mr. Langridge about the areas reconditioned were much higher than those given by Mr. Maher in his report but this is an issue which need not be further referred to here. There are, however, several expressions of opinion in Mr. Maher's report to which one could not subscribe without material qualifications and I have little doubt that this officer will further modify his views as he gains experience, particularly if he can acquire practical experience in carrying out soil conservation works. It is one thing to criticize the works of others but quite another to carry out, without defect, a large programme of soil conservation works.

It was for this reason that I felt that a visit to America was essential for Mr. Maher and still feel that this would be most desirable. He need, of course, not go at once but at some later stage he should certainly visit the United States if he is to take any prominent practical part in soil erosion control in Kenya. There have been mistakes made already in East Africa - I saw some of these when I was out there, but I did not mention them in my report as I felt that the best procedure was to discuss them with the officers concerned. A report, in my view, should be constructive.

There have been mistakes on a much larger scale in the United States and there has been recently

recently a definite swing away from what may be described as "engineering works" to the use of Nature wherever possible. The memorandum by Mr. Barnes is essentially practical and he has made out a good case for a trial to be made in the Matuagulu and Kangudu locations of the Ukamba reserve.

This trial will, of necessity, have to be very carefully planned from the beginning and all aspects of the problem - topographical, agricultural, pastoral, forestal and social - given consideration.

It will mean in reality the complete replanning of the whole area and no programme can be genuinely effective unless it has the wholehearted support of the land users. It must be impressed upon the people concerned that needless wastage of their only real asset - their soil - cannot be continued without the effects being felt ^{by} upon every member of the society.

I would not agree at this stage that broad base terraces should be dismissed as not being applicable in the soil erosion works in the ~~Kamete~~ ^{Ukamba Reserve}, nor has sufficient emphasis been given to the use of strip cropping. This system, of which much ^{use} has been made in America, can equally well be applied to native agriculture. It is pleasing, however, to note that Mr. Barnes clearly states that "Natural methods which employ vegetation cover must be employed as far as possible or costs will be

prohibitive"

prohibitive". In America this is now accepted and it has been found necessary to flatten out gulleys and to grass them over. Such action has been found to be much more economical than to attempt by engineering works to control gulleying. Also when contour terracing is being done, it has been found to be of importance that the outlets should receive first attention. Many of these outlets are constructed and grassed down a year before terracing is undertaken. In this way, water is discharged into outlets which have a good low-growing grass cover and which are frequently provided with checks of upright grasses, bushes or stick breaks. Stone, galvanized iron and concrete checks are also sometimes employed when circumstances demand it.

I have in course of preparation a brief memorandum on the information I gathered during my recent visit to America and this when complete will be sent to Kenya. The basis of the work there now is a determination of the correct usage of land with planned provision for areas which must be kept in forest or permanent pasture and for areas permitted to be used for agricultural production. The "agricultural lands" are ^{then} ~~there~~ laid out in plots which suit the topography of the country and great use is being made of strip cropping and in alternating arable with temporary pastures.

It is not assumed that all American practices, however good, will be applicable to the conditions in the Native Reserves in Kenya but it is essential to realize ^{from} for the outset that bold

planning

planning is essential. Each area must be dealt with on its own merits and it is clear that a well planned demonstration on a fairly extensive scale is the first requirement.

F. A. Stockdale

25.10.37.

There was not enough time for my
 "two time talk". I should not
 be justified in sending this forward
 for info. as a matter of urgency.
 Sir J. Stockdale will be at
 tomorrow's meeting.

Wait until

5A To Dr. J. H. Keenan (1/10)

26.10.37

6. A/Col. Sec.

300.

14.10.37

Two copies of despatch from High Comm for Basutoland,
 Bechuanaland Prot. & Swaziland and of reply thereto
 regarding proposal that an officer of Kenya Govt. might
 visit South Africa to study soil reclamation work.

* 2 copies will be sent direct for
 here.

Kenya^x might be asked to participate in the
 American experiments, which Sir P.
 Stockdale is preparing to the High Comm.

Meanwhile? Put by Clerk White
 11/13

It is odd that Kenya has been
 written to the Agricultural
 Dept. from the Union, about

work being done in the S.A.M.C. territories.

2 Oct 4.

J. J. Bann

2/x1

7. C.D.A.C. 2252.....5.11.37.
 Subject to considerations detailed, recs. free grant of
 £10,000 for comprehensive treatment of selected area of
 100,000 acres & loan of £24,000 for acceleration of the
 reconditioning of remainder of Machakos Reserve.

In para 4 of the C.D.C. letter the recommendation
 is made that the second scheme (B: up to 486)
 should be spread over longer term - two years - so
 as not to disturb the native population. This
 should be sent to Kenya saying that S.F.S. agrees.
 Para 3 - the question of agricultural officers
 going to USA. USA has just been shown it
 being thought best to keep them experimenting in
 Kenya for the time. And the C.D.C. says
 officers might go to more places. Perhaps
 it would be well to let this point be
 a time and take it up with Kenya again
 later.

Draft to Treasury herewith.

Clerk White
 9/11

The C.D.C. has not made a
 visit to America in Basutoland
 by the officer concerned a condition of
 the grant, though they have stressed
 its desirability.

J. J. Bann

9/x1

R. 208-57

Letter to Sir Stockdale
 12/10/37

To Treas.

cons.

13.11.37

Mr. Flood,

I have now added to this file the letter received from Dr. Reiser offering assistance from the Agricultural Missions Foundation of America to Uganda and Kenya in regard to visits to America to study Soil erosion.

This offer should in due course be reported to the Governments of Kenya and Uganda and their observations invited. It is to be hoped that they will accept the offer.

I have also put up six copies of my notes on Soil Conservation work in America. These have been drawn up primarily for Kenya - as indicated in the earlier minutes in this file, but I would suggest, if the E. African Department and the General Department see no objection, that copies be sent to other Dependencies under cover of a short circular despatch.

J. A. Stoddale

26.11.37.

1/2 To Dr. Reiser (9 and) - % ————— 26.11.37

9.

*This extract
copied for action
on 28.11.37
R.B. Cox
21.11.37.*

12. Treasury (S. 34609/0455) ————— 25.11.37
Sanctions free grant of £10,000 and a loan of £24,000 for C.D.F. in accordance with recommendation of C.D.A.C.

The Treasury have now agreed straight out to the C.D.A.C.'s proposals and we can proceed to inform the Governor of Kenya accordingly. I think that we should also acknowledge receipt, express thanks to the Treasury, and say that this assistance will no doubt be of great benefit to the Government of Kenya and to Africa generally, in tackling this important problem.

J. A. Flood

23.11.1937

*Copy has been placed in file
J. A. Stoddale
20/11
Copy has been placed in file for copy
complete, sent to the file for copy
authoritatively done.*

*Sir C. Parkinson
has seen
by Constant
3/12*

*W.S.
11.12.37
am*

13 To Treas. (12 and) ————— 4.12.37

COPY SENT TO ACCOUNTS DEPARTMENT

14 Uganda 598 (1/2. 10) — done — 1/12/37
15 Kenya 1092 (1/2. 4, 7, 8, 5 copies of 10, 12 & 13) — 1 bound — } 2/12/37

See doc. 13.12.37

16 & 17 now } No. C.A.C. 367 29.11.37
registered on }
7/15/37 gen. }
K. 6.6.37 }
21.2.37 }
C.A.C. 371 4.12.37

No 16 is already in file at No 10
No 17? put by Clarke White 13/12

J. E. W. Wood 14 about
J. J. P. ...
14/12

No. Gen. to provide copy
of (10) for action at X
to Sir J. H. ...
27/26/37
7815/37
Note in ...
L. ...
K. ...

PART 2

Committee's letter of the 5th of November, conveying their recommendation for the free grant of £10,000 and for a loan of £24,000 bearing interest at 3½ per cent, to be repaid by annuities between the fourth and the thirtieth years from the date of the advance. I also enclose a copy of correspondence with the Treasury, from which you will observe that their Lordships have given their approval to the Committee's recommendations.

3. I invite your particular attention to the recommendations of the Committee as set forth in their letter, especially in regard to the suggestion that the officers who are dealing with the problem of erosion in Kenya might profitably visit Basutoland and the United States of America. In this connexion I am glad to inform you that Sir Frank Stockdale, who recently visited the United States of America, has received from the Agricultural Missions Foundation in New York,

an

C. O.

- Mr.
- Mr.
- Mr.
- Sir H. Moore.
- Sir G. Tomlinson.
- Sir C. Bottomley.
- Sir J. Shuckburgh.
- Perm. U.S. of S.
- Parly. U.S. of S.
- Secretary of State.

DRAFT.

It is suggested that if Kenya should contribute at least an equal sum, and smaller, that

an offer to make available two travel fellowships of £100 each to assist in the visit of one soil erosion officer from Kenya, and one from Uganda to study policies and measures in the United States. The Foundation state that ^{one} condition of such assistance would be that the officer detailed for the visit ^(from Kenya) should be one directly dealing with conservation work in the native reserves. I think that you will agree with me that this is a generous offer, and trust that you will, on further consideration, find it possible to arrange for either ^(if not both) Mr. Maher or Mr. Barnes to visit the United States as suggested. The visit need not last for any great length of time, and you will of course realize that the suggested grant of £100 is merely intended to assist the visit and not to cover the ^{whole} expenses,

FURTHER ACTION.

~~reference to the Committee's other~~
suggestion that it is desirable to consider whether
the work to be done by the Local Native Councils should not be spread over a longer
period than two years for the reasons set out in this letter.

S. G. I ~~also~~ enclose, for your
information, three copies of a note on
soil conservation work in America, which
has been compiled by Sir Frank Stockdale
as a result of his recent visit.

I have, etc.

(Signed) W. ORMSBY GORE.

C. O.

38184/3/37

14/15

Mr. Flood. 29.11
Mr. 7. Stockdale 20/11

Mr.
Sir H. Moore.
Sir G. Tomlinson.
Sir C. Bottomley. 1.12.37
Sir J. Shuckburgh.
Permt. U.S. of S.
Parly. U.S. of S.
Secretary of State.

DOWNING-STREET.
November, 1937.
7 DEC 1937

Consd. 9
on 1938 file

Sir,

DRAFT.

UANDA
NO. 598
U.S.G.

In connexion with the question of soil erosion in Africa, I have etc. to enclose, for your information, a copy of a memorandum on soil conservation work in America which has been prepared by Sir Frank Stockdale as a result of his recent visit to that continent, and ~~which~~ ^{may} be of interest and assistance to your advisers. Sir Frank Stockdale has also been in touch with the Agricultural Missions Foundation of New York and with the United States Soil Conservation Service, and he has been given to understand by the former body that they will be prepared to make available two travel fellowships of £100 each to assist in financing the

FURTHER ACTION.

the visit to the United States of
one soil erosion control officer from
Kenya and one from Uganda, to study soil
erosion control policies and measures in
the United States. The grant would be
conditional on a similar sum being provided
by the Governments of Kenya and Uganda
and further, on the understanding that the
officer sent should be directly related to
soil conservation work in native areas.

2. I am communicating this offer to the
Government of Kenya and you will no doubt
inform me whether you wish to accept this generous
offer of the Agricultural Missions Foundation.

If so, you will no doubt arrange for the
officer whom you select to proceed to the United
States for his visit, which need not be
expected to last for any great length of time.

It would be convenient if you would consult
with the Government of Kenya so that if they
decide to send one of their officers, the
two could travel together.

I have, etc.

C. O.

38184/3/37

Mr. Flood. 29/11

Mr.

Det. 7. Stankdale 30/11

Sir H. Moore.

Sir G. Tomlinson.

Sir C. Bottomley. 1.12 fs

Sir J. Shuckburgh.

Permi. U.S. of S.

Parly. U.S. of S.

Secretary of State.

DRAFT.

THE SECRETARY,
TREASURY

ACCOUNTS DEPARTMENT.

FURTHER ACTION.

COPY SENT

13
DOWNING STREET.

November, 1937.

Sir,

I am etc. to acknowledge
the receipt of your letter of the 25th
of November, No.S.34609/0455, conveying
the approval of these Lords^{Committee of the House} to the
grant of £10,000 and the loan of
£24,000 from the Colonial Development
Fund to the Government of Kenya for the
purpose of measures against soil
erosion. A copy of the correspondence
has been sent to the Government of
Kenya and their attention has been drawn
to the recommendations of the Committee
as regards the officers concerned
being given facilities for obtaining all
possible experience and as to the
desirability of proceeding with due
caution in the work to be carried out
by the Local Native Councils. In this

copy to Kenya (13)

connexion I am to request you to inform
the Lords ^{High} Commissioners of the Treasury that the
Agricultural Missions Foundation of New York
has expressed its readiness to provide a travelling
Fellowship of £100 to assist in the expenses
of a visit to the United States ^{of America} by a selected
officer from Kenya. Mr. Ormsby Gore desires
me to express his sincere appreciation of the
action of their Lordships in sanctioning the
recommendations of the Colonial Development
Advisory Committee. He regards the problem
of erosion as both urgent and important and
he trusts that the expenditure of the sums
now made available will prove of definite
benefit not only to Kenya, but to the other
Governments in Africa, by enabling ~~the~~ ^{the necessary expenses}
^{to be acquired for tackling the}
problem ~~to be tackled~~ in a comprehensive manner.

which proposal is being
brought to the Govern-
ment's notice.

I am, etc.

Signed J. E. W. FLOOD

Any reply to this letter should be addressed to—

THE SECRETARY,

TREASURY,

WHITEHALL, LONDON, S.W.1.

and the following number quoted:

S.34609/0455.

TREASURY CHAMBERS.

20 November, 1937.



Sir,

I have laid before the Lords Commissioners of His Majesty's Treasury Mr. Flood's letter of the 13th instant (38184/3/37) signifying Mr. Ormsby Gore's concurrence in the recommendation of the Colonial Development Advisory Committee conveyed in the Secretary's letter of the 5th November that the following advances should be made from the Colonial Development Fund to the Government of Kenya:

- (a) a free grant of £10,000 for the comprehensive treatment against soil erosion of an area of 100,000 acres in the Machakos Reserve; and
- (b) a loan of £24,000 for the acceleration of the reconditioning of the remainder of the reserve, each instalment of the loan to bear interest at 3½ per cent and to be repaid by equated annuities spread over the fourth to the thirtieth years from the date of advance.

I am now to request you to inform the Secretary of State that My Lords sanction a free grant of £10,000 and a loan of £24,000 from the Colonial Development Fund in accordance with the recommendation of the Committee. My Lords

The Under Secretary of State,
Colonial Office.

note

COPY SENT TO ACCOUNTS DEPARTMENT

Copy to Kenya (13)

2, Richmond Terrace,

Whitenall, S.W.I.

26th November, 1937.

Dear Reiser,

(9)
Very many thanks for your letter of November 9th and for the offer of assistance from the funds of the Agricultural Missions Foundation towards two travel bursarships of £100 each for the study of erosion control policies in the United States of America.

It is indeed very generous of your Foundation to make this offer and the details of it will be transmitted to the Governments of Kenya and Uganda and you will be informed in due course of whether those Governments find themselves in a position, as I hope they will, to accept your offer. It is understood that any officer selected from Kenya would have to be directly related to the conservation work in the Native Reserves. It is also realized that

co-operation

DR. JOHN H. REISNER.

note that the Government of Kenya will be requested to give serious consideration to the observations of the Committee, with which Mr. Ormsby Gore agrees, as to the desirability of the officers concerned in the work being given facilities for obtaining all possible experience in dealing with the problem, and as to the desirability of proceeding with due caution in the acceleration of that part of the work which will be carried out by the Local Native Councils.

Copies of this letter have been sent to the Secretary of the Colonial Development Advisory Committee and to the Crown Agents for the Colonies.

I am,

Sir,

Your obedient Servant,

A. V. Wind

co-operation with the United States Soil Conservation Service will be another condition of the grant and there would be no harm in your approaching that Service in connexion with the matter without delay.

Whether it will be possible for the two officers to come over together on a joint visit cannot be determined here and if this is found to be impossible I hope that neither you nor the Soil Conservation Service will raise objections.

Staples is coming in to see me next week and I shall be interested in hearing all he has to tell me about his visit. I was very sorry to hear of the death of Mrs. Jones and I have written to Dr. Jesse Jones to offer my sympathy and condolences.

Yours sincerely,

(Signed) F. A. STOCKDALE.

NOTES ON SOIL CONSERVATION WORK
IN AMERICA.

These brief notes are based upon observations which were made recently during a tour across Canada and the United States when on a visit to Fiji and upon discussions with officers of the departments of Agriculture and of Scientific and Industrial Research at Ottawa and of the Soil Conservation Service and Agricultural Adjustment Administration divisions of the Department of Agriculture at Washington.

It is not proposed to discuss the causes of soil deterioration or erosion in the northern part of the American continent, the extent of the damage which has been, and still is being, caused thereby, the scientific methods which have been employed to measure the losses which have occurred or the various measures of control which have been advocated or applied. Much has already been written on these aspects of the problem and information in regard to them is already possessed by all Colonial Departments of Agriculture. Rather is it proposed to set out some of the conclusions which have been reached in regard to control measures as the result of experience gained during the past few years.

At the outset, it may be stated that it is accepted in America that generalisations in regard to soil erosion problems and particularly in regard to control measures

Copy to Hamilton
3 copies to Chicago

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measures are dangerous and that each drainage area requires to be carefully examined by technical officers before any plan of campaign is decided upon and that all control measures should be based upon well-prepared working plans for co-ordinated action.

Wind Erosion

Vast areas of the central and middle west portions of the United States and of southern portions of some of the Prairie Provinces of Canada are subject to devastation by wind erosion. This has resulted mainly from the ploughing up of considerable areas of short grass country for cereal production. These areas should have been left with their grass cover and utilized for ranching purposes. It is only the actual experience of a dust storm on the American continent that brings home the enormous soil drift which takes place when these dust storms occur. It is now recognised that the affected areas can only be dealt with (1) by the movement of people, (2) by the retirement of land from cultivation and the creation of a grass cover (3) by a greater use of strip cropping (4) by the establishment where feasible of irrigation schemes and (5) by the planting of trees wherever they have a reasonable chance of growing.

The introduction and trial of a number of exotic grasses have been made, but since the Grassland Conference at Aberystwyth this summer the American workers have recognised that they do not know sufficient about their indigenous grasses and of their value in anti-erosion measures. Greater emphasis will be given in the future to the use of the grasses native to America, but the

search

19

search for exotics will also continue. Crested Wheat grass (*agropyron cristatum*) has already proved its value in areas of low rainfall and its use in the southern portions of the Prairie Provinces of Canada will be extended. The damage in the prairies would have been much more serious if it had not been for the prevalence of the weed known as Russian thistle, which formerly was looked upon as a "curse" but is at the present time regarded less unfavourably. Its soil binding and covering properties are now recognised. An officer of the Soil Conservation Service in the United States is shortly going to Australia to search that continent for grasses which might be thought to have value in the re-covering of wind-swept lands or for use in water-eroding areas. In Southern Alberta, much has been done, after initial trials years ago by a Hollander, by the system of strip cropping. This system is now extending over quite considerable areas of the southern prairies and useful lessons are being learned therefrom. The strips are as far as possible arranged across the wind and soil moved from cultivated strips is rarely moved beyond these areas which are clothed with grass or leguminous cover. A rotation of the strips is being practised and consideration is also being given as to how the summer fallow of bare land can be avoided or changed. Ploughing across the course of the prevailing winds is also being started in many places.

Greater progress has been made in meeting the difficulties arising from the bare summer fallow in the United States than in Canada and some useful implements

have

have been evolved to deal with weed growth without the complete inversion of the soil. A system of what is known as "trash fallow" has been started and it has already proved its value in many areas and under varying conditions. This system leaves considerable lengths of stubble projecting when the land is ploughed. It would be regarded in this country as indifferent husbandry but these projections of "trash" do hinder to a considerable degree erosion by wind and under the low rainfall conditions which prevail in the areas affected it is probably a better system than the complete burial of all the stubble. If the system proves its value over a series of years, it is possible that the harvest of cereals will be so arranged as to ~~have~~ ^{leave} a greater degree of stubble than is the general practice at the present time.

Tree planting has not ~~so far~~ been organized on any scale in Canada. It is limited mainly to areas around the ~~several~~ homesteads and in the vicinity of the prairie townships. In America, much more has been done but it is now recognised that the planting of long belts of trees will not have the results which were originally hoped for. It was stated that the latest views were that belts of trees had a lifting effect on currents of wind to a distance of five times their height to the windward side of the belt (there is a small lift of the wind currents on this side) and a protective effect to a distance of fifteen times their height to leeward (the wind currents reach the ground again at this distance from the tree belts). A discussion took place on the possibilities

possibilities of chess board planting - with permitted cultivations in the squares of tree growth - and it is possible that this method may be submitted to a trial.

The United States is undertaking large irrigation works and some of these have recently been opened by President Roosevelt. They are designed to provide for intensive cultivations under irrigation for the people who will be compelled by circumstances to leave areas liable to serious erosion. Canada has begun to give thought also to the possibilities of irrigation in the solution of their southern prairie problem of drought and erosion but a shortage of finance and the availability of land further north may have the effect of checking any serious attempt in this direction for some years to come. But, eventually irrigation projects may be expected to play an important part in prairie development. Several irrigation projects are being operated by the Canadian Pacific Railway and whilst some of them have not been financial successes I was able to visit parts of the 100,000 acre scheme at Lethbridge, Alberta and to contrast the prosperous economic condition of the farmers on that scheme with the distressed condition of those nearby ^{whose} ~~when~~ drought and dust storms were taking their toll.

Water erosion.

The areas affected by water erosion in the United States are enormous. In fact 75% of all cultivated land in the country is undulating land which is liable to erosion and is to a greater or lesser degree affected. The main causes

causes of the serious erosion which has occurred are faulty methods of agriculture - mere soil exploitation has been the basis of American and Canadian agriculture in all areas away from the earlier settled eastern states or provinces - and overgrazing. The soil conservation service has been set up by the administration in the United States to deal with the matter, and considerable changes in agricultural methods have been effected by the farmers receiving subsidies on certain crops provided that they contract to undertake complete reorganization of their use of land in conformity with the soil conservation programme. Large areas of the country have been completely replanned - areas being set aside for forest or woodland growth, areas for pasturage and other areas for agricultural activities. A colossal programme of work has been undertaken and many valuable lessons have been learned therefrom:-

The more important of these may be summarized as follows:-

Emphasis should be given to the use of vegetation in all anti-erosion measures. A considerable departure from belief in engineering or structural works for the check of erosion is now evident as experience has shown that structural works are too expensive and that in certain cases the results expected therefrom have not been achieved. Silting-up behind dams put into gullies has been serious and break-aways with serious damage in consequent have not been infrequent. Break-aways in terracing have also been experienced. The main objection is, however, on the score of expense as in a large number of cases it has been found

that

that the land could not possibly meet the charges on the expenditure which had to be incurred.

It is now recognised that nature orders that where cultivation is practiced gullying is inevitable and that the gullies follow definite lines which must be looked upon as natural drainage channels. The main objective must therefore be directed to the prevention of gullies and where they do occur to forming them into natural channels along which water may move and to providing check against any excessive speed in this flow of water. The treatment of gullies now consists of ploughing in the soil at the edges where the first stages of gullies occur and then grassing down in order that the soil may be bound by the grass roots.

A similar treatment with grass or creeping vegetation is continued as far as is practicable down the courses of the gullies and cross-checks of shrubs or bushes, tall grasses, stakes, wire or galvanized iron or even earthen dams to form small reservoirs are made where necessary.

Bermuda grass (*Cynodon dactylon*) is used at the heads of gullies and the Kudzu creeper is largely used for covering the sides when the gullies have become large. Similarly it is regarded as essential that when terracing or contour banking is practised the first attention should be given to the outlets through which the water from the terraces or banks is to be carried. Broad shallow channels, which are grassed over a year before the terracing is done, are now generally provided and it was impressed upon me

that

that it was most important that the outlet channels should be well established, consolidated and covered with a good cover of vegetation before the treatment of land with terraces is undertaken. These outlet channels are also provided with cross-ditches where necessary and the water which runs down them is often led into small dams for employment for irrigation purposes or for the use of stock. Bermuda Grass (*Cynodon dactylon*) is at present favoured for the clothing of terrace outlets with a fine vegetative cover. It possesses good soil binding properties, but trials of other close growing plants are being undertaken.

Strip cropping is much in favour and it has proved its value both in the cereal growing areas and also in the cotton-growing States. Whole farms have been re-organised on a strip cropping basis with remarkable results and the demand for seed of leguminous covers and of grasses for the provision of herbage strips has exceeded supply and farmers who have reduced their cultivations of economic crops for sale have increased their live stock and have made good profits out of the sale of "seeds" for the inauguration of mixed farming with suitable rotations of arable and temporary lays.

All very steep land is being retired from cultivation and put under forest or woodland growth. When possible trees capable of producing timber or posts of an economic value are being used, but if this is not possible all sorts of woodland are being established. The main object is to get the land covered and forests or woodland in the soil conservation service are looked upon as soil protectors

protectors and not as the producers of timber for local use or export. The tops of ridges in undulating country are being covered with grasses or mixed herbage and these will be used for pasture purposes. It is intended that this pasturage should be permanent and that satisfactory measures be taken for the rotation of the grazing.

The lower slopes of undulating land are being permitted to be cultivated. Strip cropping has already been referred to. This is being pressed for wherever possible. Contour ploughing, planting and sowing is also becoming more general and will in a few years be the accepted practice for all land with any marked degree of ~~slope~~ ^{slope} ~~slope~~. Trash ploughing (already briefly described) is becoming general and is greatly assisting in the prevention of the early stages of gullying.

Lands with a relatively small slope are being provided with broad-base terraces, that of a somewhat longer slope with semi-broad-base (6 feet) terraces and when the slopes are greater bench terracing is being practised - the use of hedges of upright growing vegetation to encourage the natural formation of terraces being used when practicable. Narrow-base terraces and contour drains are also being used under certain circumstances. Ridge ploughing along the contours is also being encouraged. Pastures on sloping lands are being run through with contour furrows to check excessive run off during heavy storms and damage to the land below.

The above summary is brief, but it indicates the directions in which Soil Conservation work in the northern part

26

part of the American continent is moving. Experience has shown that it is necessary always to deal with drainage areas on a comprehensive scale and that nature should be used as far as possible to do the work which is required to guarantee the conservation of the soil for the present and successive generations.

(Sgd) F. A. STOCKDALE,

17th November, 1937.

Sir F. Stockdale

It is most generous of them.

Uganda hasn't any particular offer yet. Kenya would send either Maker or Hughes as you suggest.

Mr. Boyd

You should see this

at once in view of the discussion which took place at the last meeting of the CPAC.

I suppose I may indicate that we have voted against the proposed offer & that information in regard to it will be passed on to the Govts of Kenya & Uganda.

Mr's letter can then be put on an official basis or consideration given to it.

F. Stockdale
16/4

Please
S.

AGRICULTURAL MISSIONS FOUNDATION, INC.

156 FIFTH AVENUE
NEW YORK, N. Y.
TELEPHONE, CHELSEA 3-1897

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EXECUTIVE SECRETARY

November 9, 1937

Sir Frank Stockdale, K.C.M.G., C.B.E.
2 Richmond Terrace
Whitehall, S.W.1, England

Dear Sir Frank:

I haven't read any document with greater pleasure in a long time than I did your report on your visit to East Africa early this year. The recurring interest in and emphasis on conservation of soil resources, the necessity for immediate and comprehensive planning for soil erosion control struck a very responsive chord in me. In fact the report may prove to be rather costly to me if your reaction is favorable to the following proposal, namely, that the Agricultural Missions Foundation offer two travel fellowships of 100 L. (\$500 U.S.) to match a similar amount to be provided by the governments involved, to make possible a joint visit of one soil erosion control officer each from Uganda and Kenya to study soil erosion control policies and measures in the U.S.A. Our funds are such that the officer from Kenya would have to be directly related to the conservation work in the native reserves.

A further condition would be the full cooperation of the U. S. Soil Conservation Service, which I am quite sure would be forthcoming in full measure. If I hear favorably from you, I shall be glad to get in touch with the U.S. Soil Conservation Service and make sure of their cooperation.

We have thoroughly enjoyed having Staples with us and he seems to feel that his visit here and his observations of our various agricultural educational processes have been very much worth while.

Your own too brief visit was a very great pleasure to us, also, and I hope that it will not be too long a time before we have you here with us again.

Yours very sincerely

John H. Reisner
John H. Reisner
Executive Secretary

JHR:M

Wood

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C. O.

and (12)
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11 - 13th November 1933

- Mr. G. White. 9/11
- Mr. Vastin 9/12
- Mr. Flood. 9/11
- Sir C. Parkinson.
- Sir G. Tomlinson.
- Sir C. Bottomley.
- Sir J. Shuckburgh.
- Permt. U.S. of S.
- Parly. U.S. of S.
- Secretary of State.

DRAFT.

The Secretary
of the Treasury

DEPARTMENT

Sir, I am etc to refer to the letter
from the CDAC of the 5th
of November (CDAC 2262)

recommending a grant
(a) a free grant to the Govt
of Kenya of £10,000 for the
comprehensive treatment against
soil erosion of an area of
600,000 acres in the Mau Forest

copy to Kenya

Reserve; and to the Govt of Kenya
(b) a loan of £24,000 for the
acceleration of the reconditioning of
the remainder of the reserve;
and to request that the Lord
Commissioner of the Treasury may

FURTHER ACTION.

be

be moved to signify their
approval of the grant and
the loan in question for

the C. D. Fund. Mr. Ormsby-Gore regards
this question ^{as} one of the most important & difficult problems with which
~~the~~ Government

Tropical Africa in general, &
Kenya in particular is faced.

In the event of the

grant & loan being approved,

the Govt. of Kenya ^{will} ~~not~~ be requested

to give serious consideration to the
(with which Mr. Ormsby-Gore agrees)
views of the Author, as to the desirability

of the officers concerned in the work
being given facilities for obtaining
all possible experience in dealing with
the problem, & as to the desirability
of proceeding with due caution in
the acceleration of that part of the work
wh. will be carried out by the Local
Native Councils.

(Signed) J. E. W. FLOOD

Communications on this subject
should be addressed to—

THE SECRETARY.

Telephone: WHITEHALL 9191.

COLONIAL DEVELOPMENT ADVISORY COMMITTEE, 30

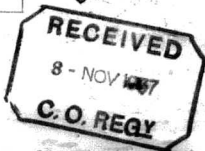
COLONIAL OFFICE,

DOWNING STREET,

S.W.1.

5th November, 1937.

C.D.A.C. 2252.



Sir,

I am directed by the Colonial Development Advisory Committee to request you to inform Mr. Secretary Ormsby Gore that, at their 102nd meeting on the 27th of October, they had before them an application (C.D.A.C. 2244) from the Government of Kenya for assistance from the Fund towards a scheme for combating soil erosion in the Machakos Native Reserve by:—

- (a) The comprehensive treatment of an area of 100,000 acres on carefully planned lines; and
- (b) The acceleration of the reconditioning of the remainder of the Reserve by straightforward but planned measures of an immediately practical and simple character.

The Committee were also invited to indicate the attitude they would be likely to adopt towards further applications for assistance to enable similar work to be undertaken in other districts. The Committee had the advantage of receiving evidence, during their discussion of this item

from

THE UNDER SECRETARY OF STATE,

COLONIAL OFFICE.

Copy to Kenya 15

from Sir Frank Stockdale, K.C.M.G., C.B.E., Agricultural Adviser to the Secretary of State.

2. Sir Frank Stockdale, who had recently been in Kenya, informed the Committee that the situation in regard to soil erosion was undoubtedly very serious indeed; the Colonial Government was spending money at a rate which would not check all the wastage of land in the Native Reserves. The proposal for the comprehensive treatment of an area of 100,000 acres was in the nature of an experiment and a practical demonstration in that area to ascertain what can be done to save these Reserves in Kenya from absolute destruction. He had just returned from the United States of America, where he had held discussions with officers of the Soil Conservation Service of that country as to the methods which they had adopted and the results which had been secured. Their present view was that the cost of dealing with the problem by purely engineering methods was prohibitive; the only practical method was by making use of nature in every way possible. It seemed to him that the methods now being adopted

adopted in the United States would have to be applied to the Native Reserves in Kenya. In this connection Sir Frank Stockdale indicated that he was much impressed by Mr. Barnes' report which made it quite clear that nature must be enlisted in dealing with the problem.

3. The Committee are impressed by the necessity for the treatment of the problem on comprehensive and sound lines. It appears to them, however, that a basis of acquired experience is necessary, and they consider that the officers dealing with the problem in Kenya could profitably visit the United States and Bavaria to study the measures being taken there for the treatment of the problem. In recommending a free grant of £10,000 for Scheme (a), the Committee, therefore, stress the desirability of ensuring that the officers concerned are given facilities for obtaining all possible experience in dealing with the problem.

4. As regards the proposal for the re-conditioning of the remainder of the Machakos Reserve, it is contemplated that by acceleration it may be possible to carry out in two years work which, at the present rate of progress, would take 15 years to complete. While

accepting

accepting the views of the Governor as to the possibility of such acceleration, the Committee feel it desirable to draw attention to the fact that it seems that the measures proposed in this connection would of necessity cause considerable interference with the inhabitants of the Reserve. Also, owing to the intensified nature of the work, they presume that a considerable number of natives would be employed during the two years and would be paid wages which they have never received before; a period of comparative prosperity might then be followed by a period of depression. In these circumstances the Committee while recommending the assistance asked for suggest that consideration should be given to the question as to whether it is desirable to spread the work over a longer period. This might ease the staff position and not only avoid undue dislocation of tribal life, but might also give time for the rectification of possible mistakes.

5. To sum up subject to the above considerations, the Committee recommend

- (a) a free grant of £10,000 for the comprehensive treatment of the selected area of 100,000 acres; and

(b)

- (b) a loan of £24,000 for the acceleration of the reconditioning of the remainder of the Machakos Reserve, each instalment of the loan to bear interest at 3½ per cent, and to be repaid by equated annuities spread over the fourth to the thirtieth years from the date of advance.

6. The serial numbers allotted to these schemes are 485 and 486, respectively.

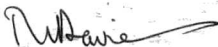
7. As regards the question of further applications for assistance to enable similar work to be undertaken in other districts, the Committee consider that caution as regards any new scheme is essential, and that a basis of acquired experience is absolutely necessary. Each case will, of course, have to be dealt with on its merits, and the Committee suggest that consideration should be given to the possibility of Native Councils accepting in respect of each of such schemes a measure of financial responsibility similar to that which the Native Council is bearing in the Machakos Reserve scheme. Subject to these considerations, and to Colonial Development funds being in fact available, the Committee would be disposed to consider sympathetically any further applications which may be submitted to them.

8. A similar letter is being sent to the
Treasury.

I am,

Sir,

Your obedient servant,

A handwritten signature in cursive script, appearing to read "R. Davis", with a long, sweeping flourish extending to the right.

Secretary to the Committee.

8. A similar letter is being sent to the
Treasury.

I am,

Sir,

Your obedient servant,

A handwritten signature in cursive script, appearing to read "R. H. Davis". The signature is written in dark ink and has a long, sweeping tail that extends to the right.

Secretary to the Committee.

AIR MAIL

WHEN REPLYING
PLEASE QUOTE
NO. &
AND DATE

C. AGR. 25/1/V/3



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THE SECRETARIAT
NAIROBI
KENYA

RECEIVED

20 OCT 1937

C. O. REGY

14 October 1937.

*Copied to
Mr. J. S. Smith*

The Acting Colonial Secretary of the Colony and Protectorate of Kenya presents his compliments to the Under Secretary of State for the Colonies and, with reference to paragraph 12 of Kenya despatch no. 551 of the 18th September, has the honour to transmit, for information, copies of a despatch from the High Commissioner for Basutoland, the Bechuanaland Protectorate and Swaziland and of the reply returned thereto, regarding the proposal that an officer of the Kenya Government might visit South Africa for the purpose of studying soil reclamation work.

had

COPY

HIGH COMMISSIONER'S OFFICE,

PRITORIA.

25th September 1937.

Sir,

I have the honour to inform Your Excellency that I have received from the Secretary for External Affairs in the Union of South Africa a copy of a letter No. 112 of the 1st July addressed by the Acting Director of Agriculture, Nairobi, to the Union Department of Agriculture, on the subject of a contemplated visit of an officer of Your Excellency's Government to South Africa for the purpose of investigating the soil reclamation works which are being undertaken with assistance from the Colonial Development Fund in certain native territories. It would seem that the undertakings referred to are those in the territories under my charge.

2. A grant for anti-erosion works on a considerable scale has been made in respect of Basutoland and the Administration would be pleased for an officer of Your Excellency's Government all possible facilities for the inspection of the work in that Territory. The Director of Agriculture suggests, however, that the visit should be delayed until after the return of Mr. L. S. Collett, Agricultural and Livestock Officer, from the United States of America where he is engaged in the study of anti-erosion and soil reclamation measures, as the experience gained by him in America would then be at the disposal of the officer concerned. It is suggested therefore that the visit to Basutoland should take place between the 15th January and the 30th April, 1938.

3. As far as anti-soil erosion work is concerned, nothing has been done in the Bechuanaland Protectorate or Swaziland, but grazing experiments which are in progress

in/

HIS EXCELLENCY
AIR CHIEF MARSHAL
SIR ROBERT BROCKE-POLHAM, G.C.V.O., K.C.B., C.M.G., C.I.C.
GOVERNOR-GENERAL KENYA.

in both Territories aim at a system of pasture management calculated to preserve the pasture and thereby prevent erosion. These experiments have only recently been started so there is, as yet, no data available, and consequently a visit would not be of any great value from the point of view of the object aimed at. It is pointed out, however, that although exactly the same work is being carried out in the Union, the Bechuanaland Protectorate experiments are laid out on a more practical basis, and for this reason the officer may wish to see them. The cost of a visit to the Bechuanaland Protectorate experiments would not be heavy, and bearing the above remarks in mind it is suggested that the final decision regarding a visit to the Bechuanaland Protectorate might be made by the officer when the time comes.

4. I am informed that should the contemplated visit of an officer of Your Excellency's Government to the High Commission Territories take place, the Union Department of Native Affairs will be very pleased to grant the officer concerned every facility to study the measures for soil erosion prevention which it is carrying out in the Union of South Africa.

I have etc.

(Sd) H.E. IRISTEAT in the
absence and by direction
of the

HIGH COMMISSIONER.

COPY.

10th October, 1937.

C.AGR.25/1/IV/102.

Sir,

I have the honour to acknowledge the receipt of your despatch C. 245 of the 25th September, the subject of a contemplated visit of an agricultural expert to South Africa for the purpose of investigating the soil reclamation works which are being carried out with assistance from the Colonial Development Fund in certain native Territories under your Excellency's care.

2. I desire to express my appreciation of Your Excellency's offer to afford as prices as possible all possible facilities for the inspection of the progress, and to convey my thanks for the information contained in your despatch.

3. An application for financial assistance from the Colonial Development Fund has been submitted by this Government with a view to combatting soil erosion in this Colony, and, while the suggested visit is not necessarily dependent on the grant of the assistance sought, I consider that detailed arrangements in respect of the visit should await the formulation of a more complete plan of action than is yet in existence. This will ensure the maximum value being obtained from the visit.

In the meantime your advice that the visit to Basutoland should take place between the 1st. and the 30th April, 1938, is noted, and the necessary instructions will be addressed to your Excellency in due course.

I have etc.

(SGD) P. BRUCE-FELT.

AIR CHIEF MARSHAL

GOVERNOR.

HIS MAJESTY'S HIGH COMMISSIONER
FOR BASUTOLAND, THE BECHUANALAND
PROTECTORATE, AND SWAZILAND,
PRETORIA.
South Africa.

2, Richmond Terrace,

Whitehall, S.W.1.

26th October, 1937.

My dear Reiser,

I have already thanked you for the arrangements you made for my visit to New York. The discussions with Dr. Jesse Jones and others were most interesting and I was glad of the opportunity of meeting you again and talking over matters of agricultural interest. Particularly did I welcome the discussion of African affairs and as the result of your observations I have suggested to Dr. Tetnall the Director of Agriculture in Uganda who is shortly proceeding to India and South Africa to study agricultural and educational progress in those countries that he should include Southern Rhodesia in his itinerary.

Upon my return, I found that the report on my recent visit to East Africa was out of the printers' hands and I am sending you a copy by this

mail

J. H. REISNER.

mail.

It may interest you to know that both Uganda and Kenya are finding money for anti-erosion work on a large scale. If these experiments are successful, further developments are likely to take place.

Yours sincerely,

(Signed) F. A. STOCKDALE.

A complete

538

P.O.A.C. 2344

COLONIAL DEVELOPMENT ADVISORY COMMITTEE:

Kenya.

Soil conservation and prevention of erosion.

I circulate, for consideration, an application from the Government of Kenya for assistance from the Fund towards a scheme for combating soil erosion in the Machakos Native Reserve by (a) the comprehensive treatment of one area of 100,000 acres on carefully planned lines, and (b) the acceleration of the reconditioning of the remainder of the Reserve by straightforward but planned measures of an immediately practical and simple character.

The Committee are also invited to indicate the attitude they would be likely to adopt towards further applications for assistance to enable similar work to be undertaken in other districts.

A Colonial Office memorandum and financial summaries in respect of (a) and (b) are prefixed.

T.W. DAVIES.

Secretary to the Committee.

COLONIAL OFFICE,

13th October, 1937.

COLONIAL DEVELOPMENT ADVISORY COMMITTEE.Kenya.Soil conservation and
prevention of erosion.

I circulate, for consideration, an application from the Government of Kenya for assistance from the Fund towards a scheme for combating soil erosion in the Machakos Native Reserve by (a) the comprehensive treatment of one area of 100,000 acres on carefully planned lines, and (b) the acceleration of the reconditioning of the remainder of the Reserve by straightforward but planned measures of an immediately practical and simple character.

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T.W. DAVIES.

Secretary to the Committee.

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4-39

Mr. Comley White. 11/10/37.

Mr. Paskin. 12/X

Sir F. Stockdale. 18/10 - Please see minute in file *Prof*

Mr. Flood. 18.10

Sir C. Bottomley B. Boston

W. S. Smith

DRAFT MEMORANDUM FOR COLONIAL DEVELOPMENT
ADVISORY COMMITTEE.

As the Committee is aware, the questions of soil conservation and the prevention of erosion have long been engaging the attention of the Governments of Kenya and of other East African Dependencies. In (the Agricultural Commission in Kenya, with) 1929/Sir Daniel Hall drew attention to the seriousness of the problem, and since that date the Kenya Land Commission (1933) and Sir Alan Pim (1936) have stressed the need for ~~rigorous action~~ ^{measures to be undertaken} if the land is to be saved from irretrievable ruin. While however

Kenya 10.551 of 1939/37

20 Chairman

Various measures are already being taken by the local Native Councils, under the guidance of Administrative and ~~useful experience has been gained~~ and Agricultural Officers. The Government of Kenya ~~however~~ has been unable to devote to this service the funds ~~which are necessary to enable really effective~~ ^{measures proposed at a scale} ~~Commencement with the needs of the position~~ remedial measures to be taken. In the first quarter of the year Sir F. Stockdale visited Kenya, and in

N.B
File to return
to Sir F. Stockdale

Copy to Kenya (15)

his

This Report once more called attention to the urgency of the problem, and recommended that ^{adequate} steps should be taken to deal

with it without delay. He estimated that an expenditure of £25,000 per annum for five years on direct control measures and of equal amount

The Governor has now submitted proposals, in a despatch of which a copy is annexed, to enable a beginning to be made. It will be observed that, while it is recognised

that the problem is one which affects the whole of the Colony, the preparation of the necessary comprehensive

surveys will take a considerable time. In the meantime, the

situation in the Machakos district (of which a survey has already been completed) is so serious as to demand that immediate

action should be taken to demonstrate the necessity for such

While, therefore, it is not proposed to relax the efforts which are already being made in other parts of the

Colony, it is proposed to put in hand forthwith a scheme for

the complete reclamation of a portion of the Machakos reserve,

while proceeding with the re-conditioning of the remainder of

the reserve by measures of a simpler character. For the first

part of the Scheme the Government of Kenya applies for a

grant of £10,000, and for the second part for a loan of

£4,000 to be repaid over a term of 30 years with interest

not exceeding 3%

*definite effort for five years
the development of better systems of agriculture and animal husbandry would be required in the region*

conservation and the preservation of the sources of the inhabitants of the Reserve are to be saved from starvation.

Apart

Apart from its immediate value from the point of view of the reclamation and economic development of the area directly concerned, the Scheme is regarded as of great importance from the point of view of testing and demonstrating, in practice, the practicability of well planned anti-erosion measures, the success of which will afford an object lesson and stimulus to the inhabitants of other districts.

The Secretary of State is satisfied not only as to the seriousness and urgency of the problem and of the care and thought which is being devoted to it in Kenya, but also as to the inability of the Colony to tackle it, on the comprehensive scale required, without financial assistance. He accordingly has no hesitation in recommending the Governor's proposals for the favourable consideration of the Committee.

Attention is also invited to the desire of the Governor to be informed of the attitude which the Committee would be likely to adopt towards

further

further applications for assistance to enable similar work to be undertaken in other districts. It will be observed that he considers that an equally strong case could be made out for the grant of a loan of some £10,000 to hasten the progress of capital works already being carried out in the Kamasia reserve from both Government and Local Native Council Funds.

The proposals now submitted have been examined by the Secretary of State's agricultural adviser, who is satisfied that practical methods of soil erosion control are contemplated and that, with such modifications as experience may indicate as being desirable, they should be capable of being effectually carried out and of giving results of considerable value not only in the Reserve in question but also to the colony as a whole. He has recently had the opportunity of considering ^{the} anti-erosion measures which have been adopted in the United States of America with a view to the Soil Conservation Service of that country and a memorandum giving details of his observations is being prepared for transmission to Kenya for information & guidance.

G. D.

Scheme A

FINANCIAL SUMMARY

1. Dependency. Kenya
2. Description of scheme. Soil Conservation

3. Date of commencement. As soon as approved.
..... months after approval of

4. Period of scheme. Two Years

5. Total Cost £ 10,000

6. Allocation of cost Local: £
.....
or non-l. ex.
of non-l. ex. will be (15% of ..)

7. Assistance desired. Loan of £
Free grant of £ 10,000

8. Suggested terms of loan.

<u>Probable yearly amounts required.</u>	1938/39	£ 6,650
	1939/40	£ 3,350
	1940/41	£
	Subsequently	£

NOTES

Question 2. A very brief description only of the scheme is required

Questions 3, 6 & 7 - delete words not required.

Questions 8.

If a loan is not applied for, write "not applicable".
If application is being made for a loan state suggested period within which the loan should be repaid, suggested terms of repayment and whether application is made for a loan free of interest for any period.

In the absence of special considerations to the contrary the rate of interest usually recommended at present on loans from the Colonial Development Fund is 3%, and the method of repayment that of equated annual instalments covering principal and interest.

Question 9.

Assuming that the scheme is begun on the date given in Question 3 state the estimated sums which will be required from the Fund during each financial year (ending 31st March) during the currency of the scheme.

Scheme B

Dependency Kenya
Description of scheme Soil Conservation
Date of commencement As soon as approved.
Period of scheme Two Years
Total Cost £. 27,000
Allocation of cost Local
Assistance desired Loan of £. 27,000
Suggested terms of loan 3% repayable over 30 years
Probable yearly amounts required

1937/38	£ 11/4	£ 13,750
1938/39	£ 11/4	£ 10,250
1939/40		

 Subsequently

Question 2. A very brief description only of the scheme is required.

Questions 5, 6 & 7 - delete words not required.

Questions 8.

If a loan is not applied for, write "not applicable".
 If application is being made for a loan state suggested period within which the loan should be repaid, suggested terms of repayment and whether application is made for a loan free of interest for any period.

In the absence of special considerations to the contrary the rate of interest usually recommended at present on loans from the Colonial Development Fund is 5%, and the method of repayment that of equated annual instalments covering principal and interest.

Question 9.

Assuming that the scheme is begun on the date given in Question 3 state the estimated sums which will be required from the Fund during each financial year (ending 31st March) during the currency of the scheme.

FAIR MAIL

KENYA
No. 551



GOVERNMENT HOUSE
NAIROBI
KENYA

RECEIVED
27 SEP 1937
C. O. REGY

18 September 1937.

Sir,

I have the honour to submit for your consideration the proposals set out in this despatch for assistance from the Colonial Development Fund in combatting soil erosion in the Colony.

2. Sir Frank Stockdale, in his Report to you on his visit to Kenya in the early part of this year, has commented very fully on this serious menace, on its causes and on the general inadequacy of the measures being taken to combat it, and on the need for expenditure of funds on a very large scale in a campaign against it. As you have pointed out, the problem is one which must be dealt with by regarding the Colony as a whole, and an attempt is being made to treat it in this manner, but at the present stage it would be most unwise to delay action in areas where deterioration is increasing almost daily until plans for the whole Colony have been prepared. It is proposed that in time the surveys already made of the Machakos, Kamasia and Kitui districts should be extended to cover the whole Colony, but this must be a long process if the surveys are to have a comparative value. In the meantime the importance of preparing plans on the basis of the watershed or drainage area is fully recognized, and the proposals set out later in this despatch have been prepared on this basis.

THE RIGHT HONOURABLE
W. ORMSBY GORE, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON, S.W. 1.

3. /

*Dep. Secy. memo
4.6.37 to Mr. L. S. Smith
J.R. 297
25/9*

*No 2 on
38/84/1/57*

James (15)

3. The comprehensive treatment which it is clear that the problem will ultimately require can best be given, to the extent of the limits set by what is immediately practicable, by an organization working in the field and representing the various Departments concerned in the work, i.e., a Soil Conservation Service composed of, in the first instance, an agricultural officer, a soil engineer and a water supply engineer. I do not propose that any such Service should be formally constituted for the present, but co-ordination can be better achieved by decentralising into the field than by any headquarters body. The officers belonging to the Service would remain members of their several Departments, but they would be specially charged with the duty of co-operating with their fellow members of the Service in order that all aspects of conservation proposals may be given due weight both before plans are completed and during their execution. When operating in a native area the officers of the Service would be under the supervisory control of the District Commissioner (or a District Officer detached for the purpose) and the local Reconditioning Committee, formal or informal, comprising representatives of the Forest and other Departments interested and native members.

4. I propose that at the outset the following should be regarded as members of the Service: Mr. A.C. Maher, Agricultural Officer, who is already engaged specially on soil conservation work, his relief to be paid from the Carnegie grant; Mr. R.O. Barnes, ^{A.S.A. SOCIETY C.E.} A.M.I.C.E., a qualified engineer who is a resident in the Colony and has specialised, over many years experience of farming and other activities in the Colony, in soil engineering; and the Assistant Engineer, Public Works Department, whom the Colonial Office have been asked to engage in connection with/

with the Colonial Development Fund grant of £42,000 for water supplies in native areas.

I am addressing a separate despatch to you recommending the immediate engagement of Mr. Barnes as soil engineer in the Department of Agriculture on a three years' agreement, to be paid from revenue. Mr. Barnes's qualifications are explained in that despatch, and all that need be said here is that his local experience, both in study and practice, of the soil erosion problem in Kenya, his ability and personality command the confidence of both natives and European farmers.

5. It is accepted that the boundaries of watersheds or drainage areas must be the basis upon which plans are formulated, but it is convenient and should be noted that these do, generally speaking, coincide with the boundaries of settled areas and native reserves. In the nature of things there must be considerable differences between the methods of treatment of privately held land on the one hand and of native reserve land on the other.

So far as the settled areas are concerned, the position can be adequately met for the moment if State assistance is limited to the following:-

- (a) ensuring that funds for soil erosion works can be obtained by farmers on loan from the Land Bank or other source at reasonable rates;
- (b) ensuring that the heavy plant required by farmers for terracing, etc. is obtainable for use at cheap rates; and
- (c) giving expert technical advice, through the Soil Conservation Service, to farmers in the laying out of protective works, terracing, drainage, etc.

As regards paragraph (b) above, Sir Frank Stockdale has recommended in his Report that this Government should acquire for loan to the Kenya Farmers'

Association two small terracing plants for use in the European areas. This suggestion has been taken up with the Kenya Farmers' Association, but the Association has demanded guarantees (such as an undertaking that work would be available to keep the plant fully employed) which it is not possible to give. Arrangements are therefore being made with a commercial firm to carry out costing trials of a broad base terracing unit on certain farms at a nominal charge to the farmers, in order to encourage private enterprise in this direction. If voluntary efforts on these lines prove insufficient in the settled areas to check loss of soil fertility, legislation both to prohibit certain practices and to compel the adoption of protective measures may become necessary, but the indications are that with general financial improvement and spreading recognition of the dangers of erosion the position in the settled areas can be controlled without legislative compulsion and without any considerable expenditure of Government funds.

6. In the native areas the solution must be looked for along quite different lines. The application of the Government policy of encouraging increased crop production from the native reserves was a stimulus to which the native loyally responded and to which much of the erosion now occurring can be ascribed. A veterinary policy of disease control unaccompanied by any economic outlet for cattle accentuated over-stocking. As more land came under cultivation, less became available for grazing, and over-stocking became worse. While it is true that the agricultural methods of the African, if left to themselves without the time-honoured remedy for shifting cultivation, namely, to move on when the land is exhausted - while these methods would have themselves had serious consequences in time, the process of erosion (aided by locusts, brought and/

and heavy rain) has undoubtedly been facilitated by official encouragement to produce and stimulus to develop. For conditions as they are today in the eroded native areas the Government cannot therefore escape a serious measure of responsibility.

7. Although propaganda, education and demonstrations of the value of such measures as gully-stopping, terracing, contour ridging, tree-planting, rotational grazing and dams are taking effect, and although the native authorities recognize the dangers of the situation, the tendency of the individual native in the eroded areas is the natural one of leaving it to his neighbour. The disastrous results of over-stocking, reducing miles of country to desert conditions, are to the individual native a standing lesson of excessive grazing by everyone's cattle but his own. The tribal consciousness, so sensitive in regard to boundaries, does not yet extend to preservation of tribal soil. It is, therefore, necessary in the interests of the tribe for the Government to move ahead of native opinion in a matter where the land itself is at stake, and to apply compulsory measures, directed towards de-stocking, without the support of and in some cases against the will of the people.

8. The whole problem of erosion and soil conservation in the native areas is not at present completely soluble, in all its aspects, on lines which provide an assurance of permanency. Land tenure, nutrition, native custom, export markets and labour are all factors which the ultimate solution must take into account. While an almost inexhaustible supply of literature on these various aspects is being studied and digested, the soil deterioration noticed by Sir Daniel Hall's Commission as far back as 1929, emphasised by the Kenya Land Commission in 1933 and referred to more recently in striking terms

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by Sir F. Stockdale, rapidly progresses. The position today in Machakos and Kamasia is described in detail in Mr. Maher's reports on these districts, copies of which are enclosed for your information. As regards the facts of the situation, it is unnecessary to add anything to these reports, except to mention that Sir Edward Ruggles Brise, Chairman of the Agricultural Committee of the House of Commons, stated in a memorandum which he gave me after a recent visit to Machakos:-

"It is not too much to say that unless the question of erosion is taken in hand both immediately and drastically, a real danger to the economic structure of the Colony is not only apparent but imminent.... Further process of erosion must immediately be stopped, however drastic a form the necessary measures may take".

9. In the three native areas in which erosion is most immediately dangerous (Machakos, Kitui and Kamasia) it is now quite clear, then, what the facts are. It is also clear that the district most urgently in need of reclamation and protection is Machakos, and the proposals which follow relate to that district exclusively.

10. In May and June of this year a survey of this district was made by Mr. Barnes with a view particularly to preparing estimates of the cost of agricultural engineering works required in two locations, as the experimental stage of the campaign. I enclose for your information copies of Mr. Barnes's Report, including one set of photographs referred to in it. Mr. Barnes arrives at a tentative estimate of not less than £200,000 as the cost of the work required during four years over the whole of the Machakos Reserve, which, for present purposes, excluding the uninhabited and fly portions, may be taken as 1,000,000 acres in area. It is obvious that the present expenditure of £1,500 per annum by the Local Native Council and of £1,000 by Government this year on reconditioning in this Reserve, is totally inadequate even when

4 sketches for area

the tide. Sir Frank Stockdale has mentioned (in respect of the whole Colony) figures of £25,000 per annum for five years on direct control measures and of an equal sum for the development of better systems of agriculture and animal husbandry. Before steps are taken to embark on expenditure of this order, certain practical tests and experiments are necessary to determine the efficacy, in native areas in this part of Africa, of the various measures adopted as sound practice in other parts of the world. The greatest importance must be attached to the laying-out of areas by proper technical methods before work begins, to supervision during the work and to maintenance on completion. No lesson stands out more clearly from the experience gained both in the United States of America and in this country than that work such as terracing and draining, unless planned and carried out accurately and with expert guidance, can do much more harm than good. In some districts in Kenya it is unfortunately true that the confidence of natives in anti-erosion measures has already been shaken by seeing erosion accelerated and not checked by work which they were advised to do, but have done in an amateur and haphazard fashion. The demonstration, in practice, of the success of proved methods would do much to enlist public opinion in the reserves on the side of conservation. The complete reclamation of one selected area would provide a badly needed means of demonstration of this kind, and of training natives from other parts of Machakos and from other districts in correct practice for the construction of dams, gully-stops, broad base terracing and strip cropping, as well as in the proper use of cattle in a balanced system of mixed farming.

11. Before, however, setting out the proposals for dealing with any particular area, it may be convenient to refer here to two points: first, the suggestion that an

officer or officers should visit the United States of America or South Africa; and secondly, the problem presented by surplus cattle.

12. You have suggested that Mr. Maher should be sent to study the work which is being done in America. I do not wish to oppose such a visit being made in due course, but there are several reasons why it should not be undertaken at present. First, it is difficult to spare Mr. Maher from the valuable work which he is doing in surveying the native areas of the Colony, for a period which would not be less than several months. Secondly, he is closely in touch with the Soil Conservation Service in America and is familiar with and up to date in his knowledge of its work and its publications. Thirdly, such a visit may be of greater value when some practical experience of work here on a fairly large scale has been gained, and when it is possible to compare the practical difficulties arising in Kenya conditions with corresponding circumstances elsewhere.

Nor is it felt that Mr. Langridge, the Re-conditioning Officer in Kamasia, is naturally fitted to gain much benefit from a visit to Basutoland. The work which he is doing would certainly suffer in his absence.

A considerable amount of published information is now available as to the work which is being done both in America and in other African territories, and in the circumstances I am doubtful whether such visits would be worth while in the immediate future.

13. Cattle, whatever soil reclamation work is done, must be the principal target of the administrative weapons employed in this campaign. All control measures will be useless, unless the numbers of cattle can be reduced to the present carrying capacity of the land. It is proposed, therefore, to introduce area by area (taking the six areas recommended/

recommended in Mr. Barnes's Report) compulsory culling of surplus cattle. Most of the surplus will be saleable to Liebig's meat extract factory, which is near the borders of the Reserve and which has been designed for a capacity of up to 100,000 head a year, and the remainder will have to be bought up from a cattle compensation fund, the owner receiving compensation plus the value of the hide and the meat. Rules similar to those approved in your despatch No.62 of the 20th January, for application to a part of the Yatta Plains, will be applied to the areas successively together with the Crop Production and Live-stock Rules, 1928, and a system of control by branding instituted.

(2) or 38279/36

14. One badly eroded area, comprising the Matungulu and Kangundu locations of a total of 100,000 acres in the north west corner of the Machakos district, is admirably suited to comprehensive and complete treatment. It is largely composed of highly fertile and deep erodible soil, and has been extensively occupied and cultivated only since the Great War. It is accessible, and it lies within a day's march of Liebig's factory, Machakos and Nairobi. Approximately one half of the area is under cultivation, and apart from the cultivated land some 20,000 acres are badly eroded. The area carries a population of 31,000 natives, with some 30,000 cattle. This fertile, gently sloping land has become heavily gullied (particularly in a central portion of 7 square miles) and photographs Nos. 25 to 32 appended to Mr. Barnes's report illustrate vividly what is happening. A path or boundary trench forms, in ten years, a gully 40 feet deep: the gully widens as the sides fall in, and nothing short of stopping with masonry works can now check the process of destruction. Such gullies number hundreds in this area alone, apart from the sheet erosion which is general/

general throughout the cultivated portions. Aerial photographs of the whole of this central portion have been taken by the Royal Air Force and will be valuable both in detail planning and as records of the rate of gullying.

15. In this area it is proposed to deal with approximately 1,200 acres by broad base terracing with a tractor unit. The purchase of a complete terracing unit and the cost of its operation form a large part of the estimate of £10,000. prepared for the treatment of this area.

16. This estimate is itemised in the accompanying memorandum of application (Scheme A). The area has not yet been laid out in detail, nor are local contouring data available for the heavy terracing work which will be necessary. The figure includes provision for gully-stopping, terracing, tree-planting on the steep slopes, stagger trenching and draining, to be carried out by an Area Supervisor and three assistants working under the direction of the Soil Engineer.

17. Complete reclamation in this area is not only a correction of past mistakes, but amounts to real economic development, since it is a definite part of the project to establish agriculture and animal husbandry in the area on a permanent and stable basis. For this purpose some redistribution of holdings may be necessary, and a demonstration small-holding would be provided by the Department of Agriculture, to serve as a training ground for natives not only in land planning but also in practical control measures and protective works. The natural fertility of the area encourages the belief that the experiment would be a success, and if it were successful it would mark a very important step forward towards proper land utilization in the native reserves.

The scheme should be regarded not merely as restorative, but as a work of important economic development, and I trust that the accompanying application for a direct grant of £10,000 for the purpose will receive your support.

18. The position in the remaining five areas, however, cannot be allowed to remain as it is or deteriorate further while this work is concentrated on the Matungulu and Kangundu locations. Some of these areas are mainly pastoral, where much can be done, if it is done quickly to re-establish grasslands by the simple process of closing areas and allowing natural recuperation to take place. It will be observed that some 25,000 acres of the Reserve are already closed, and the return of grass cover during the period of rest is an encouraging feature. The process can, however, be accelerated by seeding. The closing of large areas wholesale, involving the moving of thousands of people, as recommended in Mr. Maher's report, is not a practical proposition. An experiment in re-settlement in an area of 1,600 acres in the Makueni fly area, is now being carried out at a cost of £750 from Government funds. This includes the establishment in the cleared area of 50 families from closed land. The extent to which areas can be closed, however, depends primarily upon the success of measures of destocking as proposed in paragraph 13 above.

The Machakos Local Native Council at present spends £1,500 per annum on reconditioning measures which include the patrolling of the closed areas, trenching, gully-stopping, dams, tree-planting, etc. The value of this work would be enormously enhanced if it could be speeded up, and the next fifteen years' work at the present rate done in two. This would be possible if a loan could be raised in respect of which the Local Native Council would be responsible for interest and redemption charges totalling say, not more than £1,250 per annum from the provision

of £1,500 made annually for reconditioning by the Council at present. This acceleration would give a much needed impetus to the work throughout the Reserve. The Council is prepared to make this annual financial contribution to the cost of the campaign, and such a contribution can best be used in a capitalised form since time is an all-important factor.

19. It is not proposed that the work in these areas, although necessarily not planned in such detail or so comprehensive as the measures proposed for the Matungulu area, should be carried out in any haphazard or inexperienced manner. Each area would be roughly planned in advance in relation to its requirements in tree-planting, terracing, rotational grazing, etc. and the large gangs of compulsory paid labour drawn from the area itself would operate under European supervision and under the general direction of the District Commissioner and the Soil Conservation Service. Nothing would be done which would be likely to require revision if and when a final programme has to be elaborated. If large areas can now be planted up with trees merely for the cost of the labour involved, it is obviously wrong that they should have to await their turn in a programme carried out at the present rate of a few acres a year. Individual efforts at afforestation have some success, but maintenance is neglected, and organized effort on a large scale can succeed where the individual fails.

20. Application is accordingly made for a loan to this Government from the Colonial Development Fund of a sum of £24,000, the interest and redemption charges on which it is proposed to recover from the Machakos Local Native Council. It is not supposed that this will be sufficient to restore the area of 900,000 acres for which it provides to an adequate state of fertility and freedom from erosion, but it will go a long way towards it. The

fact that the people themselves will be paying for and doing the work will stimulate interest in maintenance and help to give the movement an internal character and popular support. Without that support little can be hoped for, although, as is said above in paragraph 7, in the matter of destocking nothing short of compulsion at the outset is likely to have the desired effect. The relevant memorandum of application (Scheme B) is enclosed.

21. The building of earth dams and improvement of water supplies for which £5,000 is provided for the Machakos district in the Colonial Development Fund grant of £42,000 will proceed pari passu with the work described in this despatch. Sixty such dams have already been constructed by the Local Native Council from its own funds.

22. In summary, although erosion is widespread throughout the Colony, in the Machakos Native Reserve it has reached a stage at which further delay in launching a large scheme of reclamation and protection for that Reserve will be calamitous. The scheme now put forward falls into two parts: (a) the comprehensive treatment of one area of 100,000 acres on carefully planned lines, and (b) the acceleration of the reconditioning of the remainder of the Reserve by straightforward but planned measures of an immediately practical and simple character. For (a) a grant of £10,000 is sought, and for (b) a loan of £24,000. All this work will be useless unless the problem of stock control is firmly and decisively tackled. This it is proposed to do, by the use of existing legislative powers of compulsion.

All other parts of the programme will have native opinion behind them.

23. It should not be inferred from the proposal to concentrate this work on Machakos that nothing is being done in other native areas. Almost every Local Native

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CMB

Council in the Colony has passed Resolutions on the subject during the past year. An illustrated booklet giving authoritative and simple advice is being prepared in five languages for use in all African schools. In Kamasia the planting of all abandoned cultivation with wattle is being considered. In FortHall and Kitui work on a small scale is being done to reclaim eroded hillsides. Throughout the Nyanza Province and on the Coast all kinds of protective measures are being experimented with, proved and demonstrated. In these areas more cannot be done without a large expenditure of public funds. Such expenditure (at least so far as such work as terracing is concerned) would not appear to be justified until experience has been gained of the Machakos scheme and until the best and most economical methods of soil protection and reclamation in native areas have been proved by practical tests in this experimental field. In considering the means of financing further conservation work on the scale proposed by Sir Frank Stockdale, (which it would be extremely difficult for this Government in present circumstances to afford) it will be useful to know whether, in the light of the attitude adopted towards the present application, further applications for assistance for this purpose have any likelihood of success. No proposals for meeting the undoubted needs of such areas as Kamasia are made in this despatch, but if the present application is favourably received an equally strong case could be made out for the grant of a loan of some £10,000 to hasten the progress of the capital works being carried out in Kamasia from both Government and Local Native Council funds.

I have the honour to be,

Sir,

Your most obedient, humble servant,

R Brooke-Popham

AIR CHIEF MARSHAL

GOVERNOR.