

ΓΕΩΓΡΑΦΙΚΑ ΧΡΟΝΙΚΑ



GEOGRAPHICAL
CHRONICLES

ΔΕΛΤΙΟ
ΓΕΩΓΡΑΦΙΚΟΥ ΟΜΙΛΟΥ ΚΥΠΡΟΥ

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VOL. XIV, No. 23, JANUARY - DECEMBER 1984

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ΤΟΥ ΓΕΩΓΡΑΦΙΚΟΥ ΟΜΙΛΟΥ ΚΥΠΡΟΥ

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ΠΕΡΙΕΧΟΜΕΝΑ - CONTENTS

Γ. Καρούζη	: Αύξηση του κλήρου μέσω του Αναδασμού 3
A. Sophocleous	: Urbanisation and population changes in Cyprus 11
F. Ch. Christofidou	: Land consolidation in Cyprus as framework for general agricultural modernization and its social and economic impacts 31
Γ. Τ. Κουμίδη	: Κυπριακές αμμουδιές 38
E. I. Demetriades	: International Conference on Population, 1984 (Mexico city 6-14 August 1984) 47
Th. Pantazis	: Groundwater exploration in Cyprus 58
Γεωγραφικά Νέα	 73

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ΔΕΛΤΙΟ

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ΑΥΞΗΣΗ ΤΟΥ ΚΛΗΡΟΥ ΜΕΣΩ ΤΟΥ ΑΝΑΔΑΣΜΟΥ

Από ΓΙΩΡΓΟ ΚΑΡΟΥΖΗ

1. Εισαγωγή

Είναι γνωστό σ' όλη σχεδόν τη Δυτική Ευρώπη, πως ο Νόμος της κληρονομίας, όπως και διάφοροι άλλοι παράγοντες, έχουν συμβάλει στη μείωση του μέσου γεωργικού κλήρου. Η γεωργική, βιομηχανική, οικιστική και τουριστική πίεση πάνω στη γη, μαζί με τις ποικίλες απαιτήσεις της σύγχρονης κοινωνίας συνεχώς σμικρύνουν το μέσο μέγεθος του γεωργικού κλήρου. Δεν είναι όμως μόνο η ελάττωση του μεγέθους του κλήρου που παρεμποδίζει την ορθολογιστική εκμετάλλευση της γεωργικής γης αλλά και ο κατακερματισμός της ιδιοκτησίας. Έτσι, σήμερα οι περισσότερες χώρες της Δυτικής Ευρώπης αντιμετωπίζουν σοβαρά προβλήματα μικρού, κατεσπαρμένου και αντιοικονομικού κλήρου. Οι προσπάθειες συνεχίζονται αμείωτες με στόχο να συγκεντρωθεί η διασκορπισμένη και πολυτεμαχισμένη μικρή ιδιοκτησία, κι όπου είναι δυνατό, ν' αυξηθεί. Ενώ στην Ανατολική Ευρώπη η λύση βρίσκεται μέσω των κρατικών και συνεταιρικών κτημάτων, στη Δυτική Ευρώπη η λύση ίσως θα πρέπει ν' αναζητηθεί στον αναδασμό και στις ομαδικές καλλιέργειες.

2. Κυπριακή Νομοθεσία

Στο θέμα της αύξησης του γεωργικού κλήρου η κυπριακή νομοθεσία για τον αναδασμό είναι μια από τις πιο φιλοπρόοδες των χωρών της Δυτικής Ευρώπης. Μέσω του αναδασμού δεν επιτυγχάνεται μόνο η συγκέντρωση των σκορπισμένων τεμαχίων μιας ιδιοκτησίας, αλλά ταυτόχρονα προωθείται και η αύξηση του κλήρου.

Ειδικές πρόνοιες της νομοθεσίας αναφέρονται στην αναγκαστική αύξηση της ιδιοκτησίας, στη δημιουργία οικονομικά εκμεταλλεύσιμων κτημάτων και ιδιαίτερα στην αγορά γης, που μπορεί να διατεθεί για την αύξηση του γεωργικού κλήρου. Η έκταση από την κατάργηση πολλών συνόρων και η έκταση που προκύπτει από καταργούμενους δρόμους, υδραγωγούς, αυλάκια και άλλα έργα βοηθούν στην αύξηση της καλλιεργούμενης γης.

Όμως υπάρχει και ειδική πρόνοια στον Νόμο της Ακίνητης Ιδιοκτησίας που εφαρμόζεται στις περιοχές όπου εφαρμόζεται το σχέδιο τ' αμπέλια, τα περιβόλια, τα άλση κι οι αρδευόμενες ή επιδεικτικές άρδευσης από πηγάδια εκτάσεις δεν μπορούν νάναι κατώτερες των 2 σκαλών σε έκταση. Οι εκτάσεις που μπορούν ν' αρδευθούν από εποχιακή πηγή θα πρέπει να 'χουν κατώτερο όριο έκτασης 4 σκάλες. Οι ξηρικές εκτάσεις θα πρέπει, τουλάχιστο να 'χουν κατώτατη έκταση 10 σκάλες.

Οι πρόνοιες αυτές που εφαρμόζονται στις περιοχές του αναδασμού συμβάλλουν από μόνες στην αύξηση του μικρού γεωργικού κλήρου. Οι πρόνοιες αυτές μαζί με την επιθυμία που υπάρχει σε μερικές περιοχές να πωληθεί γη μέσω του σχεδίου, βοηθούν σημαντικά την αύξηση του μέσου γεωργικού κλήρου.

3. Μέσο Μέγεθος Κλήρου στην Κύπρο

Το μέσο μέγεθος του κυπριακού κλήρου, όπως είναι γνωστό είναι πολύ μικρό. Ταυτόχρονα παρατηρείται και μια συνεχής μείωση του κλήρου. Είναι γνωστό πια πως από το 1946 μέχρι σήμερα συνεχίζεται με αμείωτο ρυθμό η ελάττωση της μέσης έκτασης του κυπριακού κλήρου: από 53 σκάλες το 1946 ο κυπριακός κλήρος μειώθηκε σε 46 σκάλες το 1960, και σε 34 σκάλες το 1977. Επιπρόσθετα ο κυπριακός κλήρος είναι μικρός και αντιοικονομικός, ιδιαίτερα αν λάβει ένας υπόψη της μεσογειακές κλιματολογικές συνθήκες της Κύπρου. Από την απογραφή του 1977 φαίνεται πως ο κυπριακός κλήρος στις ελεύθερες περιοχές του νησιού αποτελείται από 6.4 τεμάχια. Ο πολυτεμαχισμός της γης ποικίλει ανάλογα με τη χρήση γης και τις μορφολογικές συνθήκες, είναι δε πολύ οξύς στις βουνίσσιες και στις αρδευόμενες εκτάσεις.

Είναι ανάγκη να υπογραμμιστεί πως οι ιδιοκτησίες είναι περισσότερο πολυπληθείς από τους κλήρους, ταυτόχρονα δε περισσότερο πολυτεμαχισμένες. Η σχέση μεταξύ κλήρου και ιδιοκτησίας στην Κύπρο είναι περίπου 1:3. Οι διάφοροι παράγοντες που συμβάλλουν τόσο στη μείωση του γεωργικού κλήρου όσο και στον πολυτεμαχισμό, όπως είναι ο νόμος της κληρονομίας, η πίεση του πληθυσμού, η παράδοση, η κερδοσκοπία, κλπ., δε φαίνεται να εξαλείφονται εύκολα και ως εκ τούτου πρέπει να ν' αναμένει ένας περαιτέρω σμίκρυνση της κυπριακής ιδιοκτησίας.

4. Προβλήματα Αύξησης του Κλήρου χωρίς Αναδασμό

Αναρωτιέμαι ένας αν η μέση έκταση του κλήρου ή της ιδιοκτησίας θα μπορούσε ν' αυξηθεί χωρίς αναδασμό. Έγιναν, βέβαια, διάφορες προσπάθειες ν' αγοραστούν εκτάσεις δίπλα σε μικρά χωράφια. Όμως τέτοιες αγορές δεν είναι εύκολο να επεκταθούν σε μεγάλη κλίμακα. Ποιός, άλλωστε, θ' αγοράσει τη γη που προσφέρεται για πώληση σ' ένα χωριό; Στην ελεύθερη αγορά δε θα την αγοράσει κατ' ανάγκη ο μικροϊδιοκτήτης για ν' αυξήσει τον κλήρο του. Ίσως ακόμα ο μικροϊδιοκτήτης να μη διαθέτει τ' απαιτούμενα κεφάλαια για αγορά επιπρόσθετης ιδιοκτησίας. Έτσι οι προσπάθειες για αγορά εκτάσεων δίπλα στα υφιστάμενα χωράφια δεν δημιούργησαν τις επιθυμητές καταστάσεις. Μερικές άλλες προσπάθειες για ενοικίαση γης δε πέτυχαν. Άλλωστε δεν υπάρχει νόμος που να υποχρεώνει κάποιον να προσφέρει γη μακροπρόθεσμα για ενοικίαση. Ούτε και είναι βέβαιο πως τη γη θα την ενοικιάσει ο μικροϊδιοκτήτης. Αλλά και η ενοικίαση επιπρόσθετης γης συχνά αυξάνει τον πολυτεμαχισμό και κάποτε δημιουργεί επιπρόσθετα προβλήματα.

Οι ομαδικές καλλιέργειες, που θα μπορούσαν ν' αυξήσουν την καλλιεργούμενη γη ενός ιδιοκτήτη, δεν έχουν ακόμα καθιερωθεί στην Κύπρο.

Φαίνεται λοιπόν πως χωρίς την εφαρμογή του αναδασμού η αύξηση του γεωργικού κλήρου δεν είναι εφικτή.

5. Ευχέρεια Αύξησης του Κλήρου μέσω του Αναδασμού

Ο αναδασμός στην Κύπρο δεν είναι μια απλή συγκέντρωση της σκορπισμένης ιδιοκτησίας. Υπάρχει στη νομοθεσία του αναδασμού ειδική πρόνοια που επιτρέπει την αύξηση του γεωργικού κλήρου. Εκτός από τις απαλείψεις πολύ μικρών ιδιοκτησιών υπάρχουν κι άλλες πηγές εξεύρεσης γης. Οι εκτιμήσεις των χωραφιών που γίνονται σ' ένα χωριό και οι αξίες που γνωστοποιούνται στους ιδιοκτήτες είναι ένας άλλος παράγοντας που ενθαρρύνει μερικούς, ιδιαίτερα όσους δεν ενδιαφέρονται για γεωργική ανάπτυξη, να διαθέσουν τη γη τους μέσω του σχεδίου.

Η ενσωμάτωση ποικίλης επιπρόσθετης γης σε μια αναδιανομή, οι μετακινήσεις των ιδιοκτησιών και η συγκέντρωσή τους από ένα μέχρι τρία τεμάχια, μαζί με τη χάραξη και κατασκευή ενός καινούργιου οδικού δικτύου καθώς και το ξεκαθάρισμα της χαώδους ιδιοκτησιακής κατάστασης που επικρατεί σ' ένα χωριό, επιτρέπουν την αύξηση του κλήρου. Ενώ πριν τον αναδασμό για να αυξηθεί απλώς ένα χωράφι θα πρέπει να εξευρεθεί γη κοντά σ' αυτό, με τον αναδασμό, τις ανακατατάξεις, και τον περιορισμό των τεμαχίων, είναι εύκολη η τοποθέτηση ενός κλήρου σε μια περιοχή του χωριού, μαζί, βέβαια, με σχετική αύξηση σ' έκταση. Κι αυτή η αύξηση του κλήρου επιτυγχάνεται χωρίς πολλές δυσκολίες. Δε χρειάζονται συναλλαγές, δανειοδοτήσεις, σκοτούρες στο Κτηματολόγιο, κλπ., μεταξύ των ιδιοκτητών. Όλα διευθετούνται μ' ένα απλό, ευχερή και ανώδυνο τρόπο μέσω του σχεδίου του αναδασμού. Απλώς ο ιδιοκτήτης ενημερώνεται για την αύξηση του κλήρου του, αν ιδιαίτερα ζήτησε τέτοια αύξηση, που την πληρώνει μακροπρόθεσμα και χαμηλότοκα.

6. Πηγές Αύξησης Γεωργικού Κλήρου

Οι πηγές εξεύρεσης γης για αύξηση της ιδιοκτησίας στην Κύπρο είναι βασικά τέσσερις.

- A. Η Εκκλησιαστική γη.
- B. Η Χαλίτικη ή άλλη Κρατική γη.
- Γ. Οι Απαλείψεις μικρών ιδιοκτησιών.
- Δ. Η Ιδιωτική γη.

Όταν εφαρμοζόταν για παράδειγμα, ο αναδασμός στο χωριό Κισσόνεργα της επαρχίας Πάφου κάπου 114 σκάλες γης προσφέρθηκαν στο σχέδιο από την εκκλησιαστική επιτροπή του χωριού. Κατά τη διάρκεια εφαρμογής του αναδασμού στο χωριό Άγιος Ιωάννης Μαλούντας της επαρχίας Λευκωσίας κάπου 464 σκάλες χαλίτικης γης ενσωματώθηκαν στη διαθέσιμη γη για αύξηση του γεωργικού κλήρου. Στο χωριό Άρσος Λεμεσού 234 σκάλες ιδιωτικής γης πωλήθηκαν στην Αρχή Αναδασμού, που με τη σειρά της τη διάθεσε στους μικροκαλλιεργητές, για να αυξήσουν τη μέση έκταση της ιδιοκτησίας τους. Αλλά και οι απαλείψεις μικρών εκτάσεων απουσιαζόντων ιδιοκτητών ή ιδιοκτητών άγνωστης διαμονής, ή που ακόμα αφορούν εκτάσεις μικροϊδιοκτητών που για πολλά χρόνια έπαψαν να

ασχολούνται με τη γεωργία, δεν είναι ευκαταφρόνητες. Σε μερικούς αναδασμούς οι εκτάσεις αυτές ήταν σημαντικές:- κάπου 60 σκάλες στο Πελέντρι της Λεμεσού, κάπου 83 σκάλες στην Αγία Μαρίνα Ξυλιάτου της Λευκωσίας, 376 σκάλες στο Άρσος της Λεμεσού και 637 σκάλες στον Άγιο Ιωάννη Μαλούντας της Λευκωσίας.

Μ' αυτές όλες τις πηγές, είναι έκδηλο πως με μεγάλη ευκολία και μέσω του αναδασμού μπορεί να αυξηθεί η μέση έκταση ιδιοκτησίας.

Ο πιο κάτω πίνακας δείχνει τις πηγές αύξησης γεωργικού κλήρου κατά αναδασμό.

ΠΗΓΕΣ ΑΥΞΗΣΗΣ ΓΕΩΡΓΙΚΟΥ ΚΛΗΡΟΥ ΚΑΤΑ ΑΝΑΔΑΣΜΟ (σε σκάλες)

Χωριό	Εκκλησιαστική γη	Χαλίτικη γη	Απαλείψεις μικρών ιδιοκτησιών	Ιδιωτική γη
Κισσόνεργα/1	114	—	32	18
Χλώρακας	—	—	11	10
Ακρούντα	7	15	12	22.5
Φοινικάρια	—	0.2	8	43.5
Παλαιχώρι	23	57.1	27	106
Άρσος	—	1.1	376	234
Αγ. Μαρινούδα	—	—	4	—
Καλό Χωριό	—	2.8	26	6.5
Πελέντρι	—	0.1	60	8
Ποταμίτισσα	—	—	15.7	16
Άγ. Ιωάννης(Μ)	—	464	637	125.5
Κολώνη	—	—	20	—
Αγ. Μαρίνα(Ξ)	—	1.1	73.5	—
Γεροσκήπου	—	—	1.6	43.0
Ξυλιάτος	—	20.1	98.3	17.9
Λουβαράς	—	24.9	—	—
Αχέλια	70	8.5	—	—

7. Ποιοι Μπορούν ν' Αυξήσουν τον Κλήρο τους

Είναι αξιοσημείωτο πως στην Κυπριακή Νομοθεσία υπάρχει πρόνοια για τη διάθεση της επιπρόσθετης γης. Από το Νόμο καθορίζεται πως οι επιπρόσθετες εκτάσεις παραχωρούνται σ' εκείνους που «αυτοπροσώπως καλλιεργούν τη γη τους». Ταυτόχρονα καθορίστηκαν από την Αρχή Αναδασμού κριτήρια με βάση τα οποία διενεργούνται οι διαθέσεις της γης. Έτσι κατά σειρά προτεραιότητας, αν υπάρχει διαθέσιμη γη, παραχωρείται σε ιδιοκτήτες-καλλιεργητές που συγκεντρώνουν τις πιο κάτω ιδιότητες:-

- (α) Είναι πρόσωπα που κατέχουν ιδιοκτησία μικρότερη του οικονομικά βιώσιμου κλήρου.
- (β) Είναι πρόσωπα που κατοικούν στο χωριό που διενεργείται ο αναδασμός

ή σε γειτονικά χωριά.

- (γ) Είναι πρόσωπα που η ηλικία τους είναι κάτω των 45 χρόνων.
- (δ) Είναι πρόσωπα που ανήκουν σε οικογένεια με πέραν των τεσσάρων ατόμων.
- (ε) Είναι πρόσωπα με προοδευτικές αντιλήψεις όσο αφορά την εκμετάλλευση της γης.

Έτσι με την ειδική πρόνοια στο Νόμο και με τα κριτήρια που καθορίστηκαν από την Αρχή Αναδάσμου οι μικροϊδιοκτήτες καλλιεργητές μπορούν μέσω του αναδάσμου να αυξήσουν το μικρό τους κλήρο. Αυτό σε τελευταία ανάλυση σημαίνει αύξηση του εισοδήματος των χαμηλά αμοιβόμενων στρωμάτων της γεωργικής τάξης.

8. Οικονομικά Εκμεταλλεύσιμο Κτήμα

Σύμφωνα με το Νόμο του Αναδάσμου, η Αρχή Αναδάσμου καθορίζει για κάθε περιοχή το οικονομικά εκμεταλλεύσιμο κτήμα. Το 1973 σαν τέτοιο κτήμα καθορίστηκε εκείνο που αποφέρει £800 λίρες το χρόνο, με βάση τα μισθολογικά και τιμαριθμικά δεδομένα της εποχής. Για το 1984 οικονομικά εκμεταλλεύσιμο κτήμα είναι εκείνο που αποφέρει ετήσιο εισόδημα £5,100 λίρες το χρόνο. Συνήθως για τον υπολογισμό του οικονομικά εκμεταλλεύσιμου κτήματος λαμβάνονται υπόψη οι ακόλουθες παραδοχές.

- A. Το εισόδημα που προκύπτει από ένα κτήμα πρέπει να 'ναι ικανό να συντηρεί την οικογένεια του γεωργού.
- B. Λαμβάνεται υπόψη το μέσο εισόδημα των απασχολουμένων στους διάφορους κλάδους της παραγωγικής δραστηριότητας.
- Γ. Στον υπολογισμό του μέσου εισοδήματος λαμβάνεται το εισόδημα από πηγές, του συζύγου και της συζύγου.
- Δ. Η φύση του γεωργικού επαγγέλματος (ακανόνιστο ωράριο, απρόβλεπτο εισόδημα, καιρικές συνθήκες) δημιουργεί την ανάγκη υπολογισμού του εισοδήματος με βάση τους εργαζόμενους με ημερομίσθιο.

Η δημιουργία οικονομικά εκμεταλλεύσιμων κτημάτων σε μια περιοχή αναδάσμου είναι πράγματι ένας πολύ φιλόδοξος στόχος. Αν λάβει ένας υπόψη το μικρό μέσο μέγεθος κλήρου στην Κύπρο, τις μόνιμα ξηρικές εκτάσεις του νησιού, το συναγωνισμό στη χρήση γης, την πολύ μικρή έκταση του νησιού και τις μικρές διαθέσιμες εκτάσεις, τότε δεν μπορεί παρά να συμπεράνει πως η δημιουργία οικονομικά βιώσιμων μονάδων είναι εξαιρετικά δύσκολη.

9. Επιτεύγματα Οικονομικά Εκμεταλλεύσιμου Κτήματος στην Κύπρο.

Παρά τις τεράστιες δυσκολίες που συναντώνται στην Κύπρο, κατορθώθηκε στις διάφορες περιοχές όπου εφαρμόστηκε το σχέδιο να δημιουργηθεί σημαντικός αριθμός οικονομικά εκμεταλλεύσιμων κτημάτων. Στο Παλαιχώρι, για παράδειγμα, το 5.7% των κτημάτων έγιναν οικονομικά βιώσιμα, στα Φοινικάρια το 11.6%, στη Χλώρακα το 17.1% και στον πρώτο αναδάσμο της Κισσόνεργας το 29.8%.

Για τη δημιουργία βιώσιμων κτημάτων σοβαρό ρόλο διαδραματίζουν διάφοροι παράγοντες όπως οι αρδεύσεις, η χρήση της γης, η γεωργοκτηνοτροφική εκμετάλλευση, η έκταση του κλήρου, κλπ. Απαιτείται μικρότερη έκταση σε αρδευόμενες εκτάσεις και μεγαλύτερη σε ξηρικές. Στις αμπελουργικές περιοχές ιδιαίτερα της Πάφου, που θεωρούνται ξηρικές περιοχές, απαιτείται μικρότερη έκταση παρά στις σιτηροπαραγωγικές περιοχές, της Κεντρικής Πεδιάδας. Αλλά και στις αρδευόμενες εκτάσεις με προσοδοφόρες καλλιέργειες η έκταση του βιώσιμου κλήρου είναι μικρότερη παρά σε ολιγότερο αποδοτικές καλλιέργειες. Στις ξηρικές περιοχές όπου είναι δυνατό να μεταφερθεί πολύ λίγο πόσιμο νερό για τα ζώα οι καταστάσεις των εκτάσεων διαφοροποιούνται.

Είναι ανάγκη να υπογραμμιστεί πως πιο εύκολα δημιουργούνται οικονομικά βιώσιμα κτήματα, όταν τα κτήματα είναι συγκεντρωμένα. Δε δημιουργούνται, για παράδειγμα, σοβαρές οικονομικές εκμεταλλεύσεις σε μικρά τεμάχια. Κι αν επρόκειτο να γίνει σύγκριση μεταξύ συγκεντρωμένων και διασκορπισμένων βιώσιμων κτημάτων με τις ίδιες καλλιέργειες, τότε η έκταση του βιώσιμου κτήματος από το συγκεντρωμένο κτήμα θα 'ναι σφαλώς μικρότερη.

10. Αποτελέσματα Αύξησης Γεωργικού Κλήρου στην Κύπρο

Θα μπορούσε να λεχθεί πως τα αποτελέσματα της αύξησης του κλήρου μέσω του αναδασμού υπήρξαν θεαματικά. Η μέση έκταση της ιδιοκτησίας στις περιοχές όπου εφαρμόστηκε το σχέδιο του αναδασμού αυξήθηκε κατά 45%. Στην Κολώνη, για παράδειγμα, η ιδιοκτησία αυξήθηκε κατά 24.5%, στην Ακρούντα κατά 32.5%, στον Άγιο Ιωάννη (Μαλούντας) κατά 85.4% και στην Αγία Μαρίνα (Ξυλιάτου) κατά 192.8%. Πίνακας με την αύξηση ιδιοκτησίας κατά αναδασμό στα 14 συμπληρωθέντα σχέδια του αναδασμού έχει ως ακολούθως:-

Αύξηση Ιδιοκτησίας κατά Αναδασμό, σε 14 Συμπληρωμένα Σχέδια

Σχέδιο	% Αύξηση
1. Ακρούντα	32.5
2. Φοινικάρια	43.1
3. Κισσόνεργα/Ι	59.6
4. Χλώρακας	32.7
5. Παλαιχώρι	70.9
6. Άρσος	45.9
7. Αγ. Μαρινούδα	3.5
8. Καλό Χωριό	16.3
9. Πελέντρι	87.5
10. Ποταμίτισσα	48.0
11. Άγιος Ιωάννης (Μ)	85.4
12. Κολώνη	24.5
13. Αγία Μαρίνα (Ξ)	192.8
14. Ξυλιάτος	73.3

11. Κύρια Χαρακτηριστικά Αύξησης Γεωργικού Κλήρου μέσω του Αναδασμού

Η αύξηση του γεωργικού κλήρου μέσω του αναδασμού ακολουθεί μια ιδιότυ-

πη πορεία. Δεν προστίθεται απλώς λίγη έκταση σ' ένα από τα πολλά σκορπισμένα τεμάχια ενός γεωργού. Απεναντίας η αύξηση του κλήρου είναι μια ωφέλεια από τις πολλές που δέχεται ο γεωργός με τον αναδασμό

Κι αν ακόμα δεν εφαρμοστεί αναδασμός σε μια έκταση, αλλά η μέση αγροτική ιδιοκτησία αυξάνεται κατά 45%, αυτό και μόνο σημαίνει πως το μέσο αγροτικό εισόδημα του κύριου γεωργού αναπόφευκτα αυξάνεται σημαντικά. Όταν όμως ένας αναλογιστεί πως ο αναδασμός συνοδεύεται με μια δέσμη αναπτυξιακών μέτρων, τότε τα οφέλη της αύξησης του κλήρου, γίνονται πολύ πιο αισθητά. Ούτε και είναι εκπληκτικό, γιατί στις περιοχές αναδασμού περιορίζεται η ακαλλέργητη ή ανεκμετάλλευτη γη, αυξάνεται η παραγωγή καθώς και η παραγωγικότητα εργασίας και κεφαλαίου.

Το μεγάλο πρόβλημα που βασανίζει σήμερα τους προγραμματιστές του αγροτικού χώρου είναι η δημιουργία βιώσιμων μονάδων, που συνήθως μόνο με την αύξηση του γεωργικού κλήρου και την αναδιάρθρωση των καλλιεργειών είναι δυνατή. Όμως η αναδιάρθρωση των καλλιεργειών έχει τα όριά της. Η αύξηση του γεωργικού κλήρου στην Κύπρο, που κι αυτή έχει τα όριά της, πολλές φορές προέρχεται αυτόματα με τη βελτίωση της χαώδους δομής της κυπριακής ιδιοκτησίας.

12. Επίλογος

Είναι πολύ λίγες οι χώρες στον κόσμο που μπόρεσαν μέσω του αναδασμού να αυξήσουν τόσο πολύ τη μέση αγροτική ιδιοκτησία. Είναι δε η κυπριακή νομοθεσία πολύ ενισχυτική στο θέμα της αύξησης του κλήρου. Ούτε και είναι μικρό πράγμα να ξεκαθαρίζουν σ' ένα σχέδιο αναδιανομής τόσα πολλά πράγματα:- να φεύγουν από την περιοχή αποθανόντες ή αγνώστου διαμονής ιδιοκτήτες, ιδιοκτήτες που απουσιάζουν για δεκαετίες στο εξωτερικό, μικροϊδιοκτήτες που δε νοιάζονται για τη γεωργία. Δεν είναι λίγο πράγμα εκκλησιαστική γη που για δεκαετίες νοικιαζόταν στους γεωργούς, να προσφέρεται τώρα για πώληση. Ακόμα και οι χαλίτικες εκτάσεις που για χρόνια παρέμεναν ανεκμετάλλευτες και έπαιρναν την όψη κακοτράχαλου τόπου, τώρα ενσωματώνονται στην αγροτική έκταση του αναδασμού. Αναρίθμητα τεμάχια που κατέχονται εξ αδιαιρέτου, διπλή και πολλαπλή κτήση της ιδιοκτησίας, όλα βρίσκουν τη λύση τους μέσω του σχεδίου.

Σ' αυτό τον τομέα της αύξησης της μέσης ιδιοκτησίας η Κύπρος προέχει άλλων χωρών κι αυτό το οφείλει στον αναδασμό, στη νομοθεσία του αναδασμού, και στην προοδευτικότητα των κυπρίων γεωργών, που συνεχώς ενστερνίζονται δύσκολα αλλά περιεκτικά αναπτυξιακά σχέδια.

Το ότι η Κύπρος άργησε να υιοθετήσει σοβαρά μέτρα αγροτικής μεταρρύθμισης, που άλλες χώρες τα δέχτηκαν από πολύ νωρίς, είναι ίσως ακόμα ένας λόγος που διευκολύνει έστω και αργά, την αύξηση του γεωργικού κλήρου.

(Ομιλία που δόθηκε στο Ι΄ Σεμινάριο Αναδασμού, που πραγματοποιήθηκε στον Αγρό, το Σεπτέμβρη του 1983).

SUMMARY

Land consolidation in Cyprus, a comprehensive rural development project, apart from the grouping-up of the scattered and fragmented plots of land, into compact ones, provides for the enlargement of the land holdings or ownerships as well.

Like many countries of the world, Cyprus is faced with small and highly fragmented land holdings which are further diminishing in size over time. The average size of the cypriot agricultural holding is now estimated to be less than 34 donums.

With the implementation of land consolidation significant increases in the average size of ownerships are achieved. In the first 14 completed schemes the average size of ownerships was increased by 58%, whilst the highest increase achieved so far in the average size of ownership was 193%. The extra land which is allocated, on special criteria to those farmers who are interested in increasing their ownerships and who pay back the value of the land they acquire, on long-term, low-interest loans, comes from state/church/private land which may be offered to or purchased by the Land Consolidation Authority. It comes also from the expropriation of properties which are below the lower limits set by the land consolidation law.

The land consolidation law provides also for the creation of as many economically viable holdings as possible. The economically viable holding is the one that should yield such an income that should be sufficient to support a farmer's family within the prevailing standard of living in Cyprus. For 1984 the respective estimate was £5,100.

Undoubtedly with the implementation of land consolidation and the enlargement of ownerships the agricultural income is raised and production and productivity are much increased.

URBANISATION AND POPULATION CHANGES IN CYPRUS

By ANDREAS CL. SOPHOCLEOUS

ABSTRACT

Cyprus is the third largest island of the Mediterranean situated at the far eastern corner of this important sea. It has a very ancient history, a varied topography and a strategic geopolitical importance.

The population of Cyprus is about 650,000; 80% are Greek Cypriots, 18% Turkish Cypriots and 2% are other minorities. Though the population can be still considered of intermediate age, the proportion of old-aged people has been steadily increasing in the last years at the expense of youngest age groups due to fertility decline, the decline in mortality and migration trends. Up to 1974 the population of the island was changing gradually from rural to urban. But the Turkish invasion of 1974 brought forced urbanisation with the uprooting and displacement of 200,000 people from their homes, largely rural. These refugee people settled mainly in and around the existing urban centres.

The most important factor which has influenced the distribution of population and the settlement pattern has been urbanization. The urban population of Cyprus is distributed in the six towns, which act as the capitals of the six administrative districts. As a result of tourism boom after 1976 a change to the structure of Cyprus settlements has been witnessed also.

Urbanisation and the changing socio-economic conditions are bringing changes to the traditional pattern of rural settlements. The most important factor of this change is internal migration from the villages to the urban areas. Due to this movement and the housing programmes of refugees, there is a pressure on land values and a changing pattern of land use is obvious.

Urbanisation contributed also in changes to the employment pattern of rural population. Structural changes in employment were striking during the last five years. The total people employed outside agriculture has declined, while a considerable proportion of employed rural population commute to the main towns daily.

Rapid and uncontrolled urbanisation created many problems. Urban growth and development obviously need to be guided and controlled through proper planning. Until 1972, Cyprus had no comprehensive planning legislation either at the national, regional or local levels. Physical development was taking place in a haphazard way which was related to urbanisation, the spread of settlements, the regional differences in incomes and service provision and the distribution of

population. These problems have been aggravated since the Turkish invasion of the island in 1974 and the concentration of refugee population in the main urban areas.

In order to correct this situation Cyprus Government has introduced the Town and Country Planning Law of 1972. This law will enable the planning of the development of the island as a whole, as well as the development of smaller regions and individual settlements in a comprehensive and integrated way.

1. Introduction to the History and Geography of Cyprus

Cyprus is situated at the far eastern corner of the Mediterranean Sea, with Syria to the east, Turkey to the north, Egypt to the south and Greece to the west. Due to its strategic geographical position it has become a central point between East and West, North and South. It covers an area of 9.251 sq.km. and is the third largest island in the Mediterranean. Its maximum length is 225 km, while its greatest width is 97 km. (Map 1. Cyprus in the Eastern Mediterranean).

The strategic position of Cyprus at the crossroads of civilizations and between three continents has been perhaps the most important single factor behind the island's turbulent history. But it is this turbulent history which has given the island its rich and original heritage. This history spans nearly 8000 years of human migrations, cultural influences, art styles, living religions, political and conquering ambitions. From this long heritage has developed an identity and character which is basically Greek and Christian but purely Cypriot.

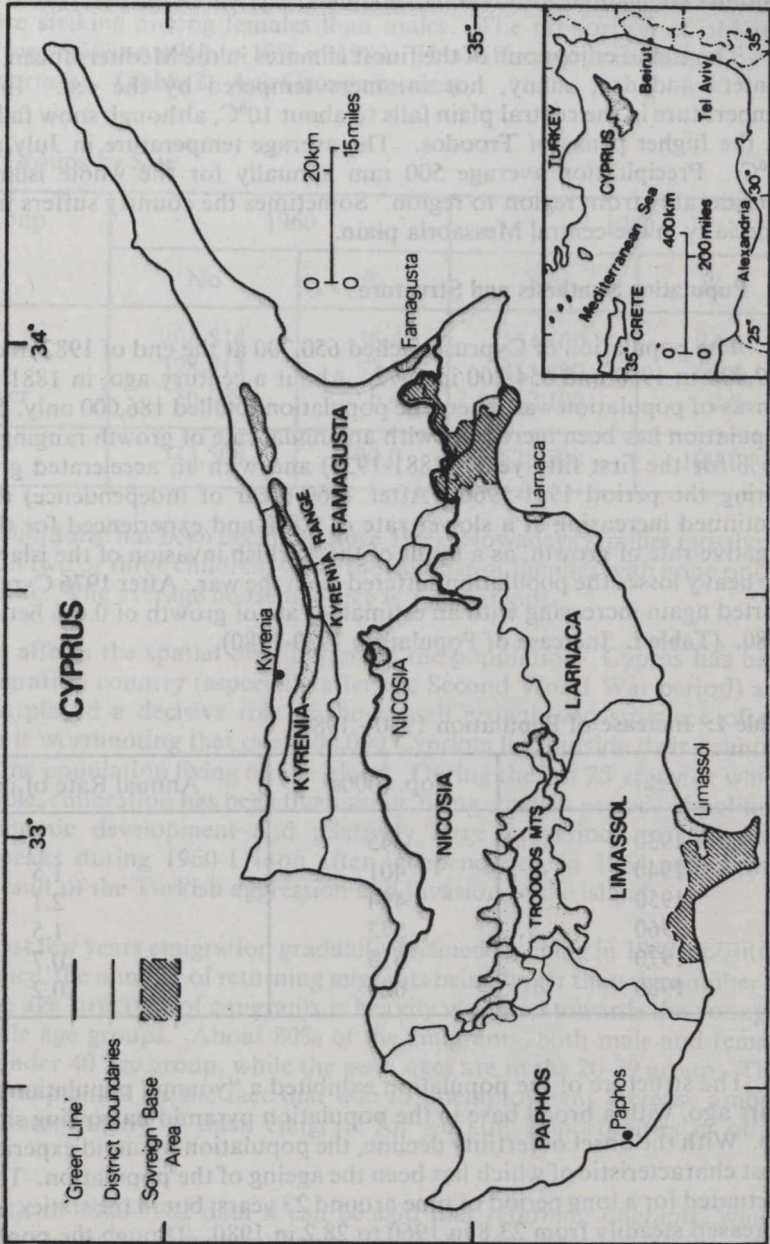
The extraordinary variety of conquerors and civilizations confronted the island, left vivid remains and landmarks on the landscape. Archaeological sites and ancient monuments date from the twilight of history: Neolithic settlements, Bronze Age relics, Greek and Roman theatres and temples, Byzantine churches and Medieval Gothic churches and castles from the Venetians and Lusignans, mosques and Islamic shrines from the Ottom period and British cottages from the British colonial period.

The population of the island, a total of about 650,000, is largely a reflection of the many nations that made it their thorough-fare in the past: Greeks constitute 80% of the population, Turks 18% and other minorities of Maronites, Armenians and Latins the rest 2%.

The shape of the island has been determined by the two most prominent relief features. Along the northern coast runs the narrow Kyrenia mountains range, known as "Pentadactylos", the craggy limestone peaks of which rise to 1024 m. The Troodos plutonic massif to the centre and south-west is more extensive and imposing, rising to 1,951 m. at the peak of Olympus. Between the two ranges lies the board alluvial plain of Messaoria, stretching from the east coast of Famagusta to the west fertile Morphou Basin.

The coastline is rocky and indented with numerous coves and long sandy beaches. The landscape is varied with interesting contrasts and striking features. In the north the coast is backed by a narrow coastal plain covered by olive, carob and citrus plantations and rises sharply into the Kyrenia range. In the south the coastal

MAP I: The dividing line after the Turkish invasion of 1974 and the geopolitical position of Cyprus



strip is broader, extending from Larnaca plain in the east to Limassol and Paphos lowland to the west and rising gently into the foothills of the Troodos range. The Troodos massif has rounded hills and a deeper soil cover of volcanic origin. Its upper slopes are forested with pine, cedar, cypress and dwarf oak, while the lower foothills are planted with carobs, olives and vines.

The island enjoys one of the finest climates in the Mediterranean, with mild wet winters and dry, sunny, hot summers tempered by the sea. In January the temperature in the central plain falls to about 10°C, although snow falls every winter on the higher peaks of Troodos. The average temperature in July and August is 29°C. Precipitation average 500 mm annually for the whole island, but varies considerably from region to region. Sometimes the country suffers from droughts, especially in the central Messaoria plain.

2. Population Synthesis and Structure

The population of Cyprus reached 650,700 at the end of 1982 in comparison to 629,000 in 1980 and 654,200 in 1972. About a century ago, in 1881 when the first census of population was taken, the population totalled 186,000 only. Since then, the population has been increasing with an annual rate of growth ranging from 1.2% to 1.5% for the first fifty years (1881-1931) and with an accelerated growth of 1.7% during the period 1931-1960. After 1960 (year of independence) the population continued increasing at a slower rate of 0.8% and experienced for the first time a negative rate of growth, as a result of the Turkish invasion of the island in 1974 and the heavy losses the population suffered from the war. After 1976 Cyprus population started again increasing with an estimated rate of growth of 0.6% between 1976 and 1980. (Table I. Increase of Population 1930-1980).

Table 1: Increase of Population 1930 - 1980

Year	Pop. (000s)	Annual Rate of increase %
1930	345	
1940	401	1.5
1950	494	2.1
1960	573	1.5
1970	615	0.7
1980	629	0.2

The structure of the population exhibited a “young” population some 20 to 50 years ago, with a broad base in the population pyramid narrowing smoothly to the top. With the onset of fertility decline, the population pyramid experienced changes most characteristic of which has been the ageing of the population. The median age fluctuated for a long period of time around 23 years, but in the sixties and seventies it increased steadily from 23.8 in 1960 to 28.2 in 1980. Though the population can be still considered of intermediate age, the population of old-aged people has been steadily increasing at the expense of the youngest age groups. Thus the population

aged 65 and over increased from 6.4% in 1960 to 9.9% in 1980, while the proportion of children below 15 years decreased from 36.4% to 24.6% respectively. In 1960 the aged-child ratio was 17.6 elderly for every 100 children, an indication that Cyprus population is tending to be old. The main reason for this is the drop in fertility; the decline in mortality and at times heavy migration were also secondary factors. Ageing is more striking among females than males. The proportion of old-aged women rose from 6.5% on 1960 to 10% in 1980. This difference is explained by the higher male mortality. (Table 2. Age Groups by size).

Table 2: Age Groups by Size

Age Group	1960		1980	
	No	%	No	%
0 - 14	208,514	36.4	154,600	24.6
15 - 64	328,413	57.2	411,800	65.5
65 and over	36,639	6.4	62,100	9.9
TOTAL	573,566	100.0	628,500	100.0

The household size has been declining since 1960. Nowadays families mostly are concentrated on two or three children, while the number of families with none or one child is increasing. The average household size is 3.65 persons.

Migration affects the spatial distribution of the population. Cyprus has been mainly an emigration country (especially after the Second World War period) and emigration has played a decisive role in the overall growth and structure of the population. It is worthnoting that over 300,000 Cypriots live outside their country, almost half of the population living on the island. During the last 25 years for which data are available, emigration has been fluctuating, being small in periods of political calm and economic development and relatively large in periods of upheaval, recording its peaks during 1960-1 soon after independence, in 1964 and during 1974-76, as a result of the Turkish aggression and invasion of the island.

During the last few years emigration gradually declined reaching in 1980 a positive migration balance, the number of returning migrants being larger than the number of emigrants. The age structure of emigrants is heavily weighted towards the younger and early middle age groups. About 80% of the emigrants, both male and female belong to the under 40 age group, while the peak ages are in the 20-29 group. This figure is partly explained by the fact that due to unemployment increase among University graduates many of them emigrate for working opportunities in other countries.

On the basis of 1980-1982 data it can be said that returning migrants, which constitute the largest part of immigration, are generally older than emigrants. this factor, coupled with the forceful displacement of about 1/3 of the total population of the island as a result of the Turkish invasion in 1974, caused a major disturbance in the spatial distribution of population.

3. Urban and Rural Population and Settlements Pattern

The population of Cyprus remained basically rural up to 1946. Population in that census year was 74% rural and 26% urban. The same pattern prevailed until 1974, when the Turkish invasion brought forced urbanisation with the uprooting and displacement of 200,000 people from their homes, largely rural, who have settled mainly in available and living conditions were better. It is a fact that up to 1974, the population here employment of Cyprus was changing gradually from rural to urban. But while the urban/rural split was 22/78 in 1931, 26/74 in 1946 and 35/65 in 1960, it rose to 42/58 in 1973 and it is estimated that by the year 2,000 the urban share would rise to 63%. This share has almost been attained today due to the changes brought by the Turkish invasion of 1974 (Table 3. Population Distribution of Cyprus - Urban and Rural).

The most important factor which has influenced the distribution of population and the settlement pattern has been urbanisation. The neap tide of urbanisation and the economic recession of the thirties forced farmers to pursue other forms of employment in towns. But still prior to World War II the economy of the island was rural with practically no industrial activity. By 1946 there had been significant economic changes and improvements in communications, which facilitated the transition from an agricultural economy to a commercial economy which centred on towns and led to a rapid drift of population to urban centres. The "spring tide" of urbanisation occurred in the period 1946-1960 and coincided with the transition from a dominantly rural-based economy to a commercial and industrial economy that favoured the growth of towns at an annual rate of growth of 4.2%, as opposed to 0.7% of rural growth. This rate declined in the period 1960-1974 to 2.1% and is anticipated to increase mobility, soaring land values and high rates of urbanisation in rural-urban fringe areas, i.e. the peri-urban villages.

The main factors that influenced and promoted urbanisation in Cyprus are:

- (a) The rate of population increase.
- (b) The land tenure system and high land values.
- (c) The degree of accessibility of the rural areas to the towns.
- (d) Better job opportunities in the towns.
- (e) The discrepancy between urban and rural standards of living, and
- (f) The degree of commuting.

The net result of the above factors is that although a concentration has occurred in the towns, the rate of urban-rural migration has been tempered by the prevailing social, economic and transportation factors. On the whole urbanisation has resulted in the spread of the benefits of rising standards of living to a large part of the rural population.

On the whole, the size of settlements in Cyprus is small. With the exception of

Table 3: Population Distribution (Urban and Rural)

	1972 (Estimated)			1976 (Government controlled areas only)			1980 (Government controlled areas only)		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Nicosia	120,750	122,450	243,200	129,300	68,300	197,600	147,300	65,900	213,200
Kyrenia	3,700	29,200	32,900	—	—	—	—	—	—
Famagusta	43,000	85,800	128,800	—	24,100	24,100	—	24,100	24,100
Larnaca	21,150	39,600	60,750	41,300	40,200	81,500	43,900	37,300	81,200
Limassol	70,400	58,450	128,850	101,900	44,700	146,600	105,200	43,100	148,300
Paphos	10,900	48,800	59,700	17,600	30,500	48,100	18,900	29,000	47,900
CUPRUS	269,900	384,300	654,200	290,100	207,800	497,900	375,300	199,400	514,700
Ratio	41%	59%	100%	58.25%	41.75%	100%	61.25%	38.75%	100%

Source: Department of Statistics and Research and Department of Town Planning & Housing

only two settlements (Nicosia the capital and Limassol), they are all below the 100,000 population group. Moreover they comprise overwhelmingly of settlement below 2,000 inhabitants.

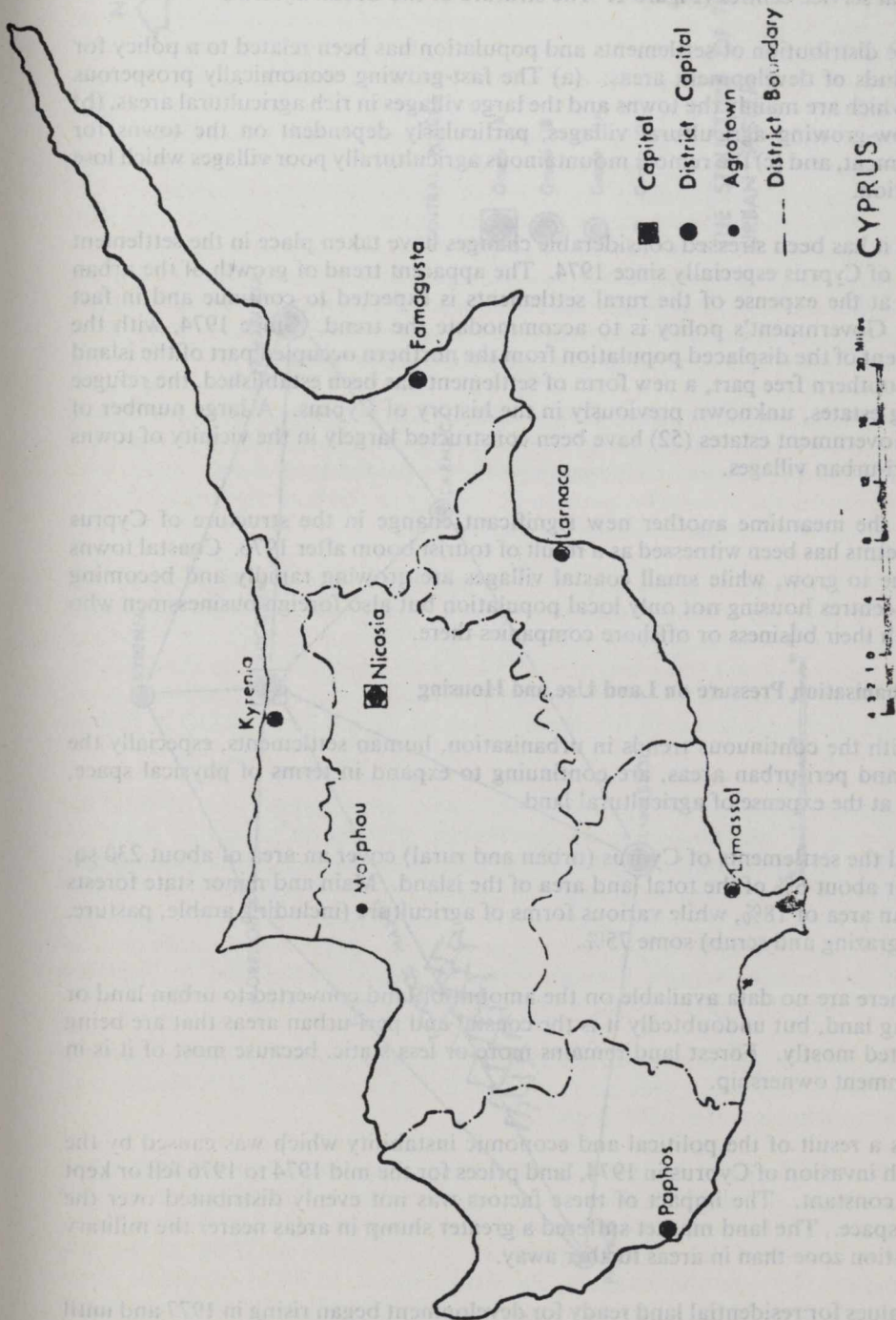
The most important factor influencing the settlement pattern is urbanisation: the movement of the rural population to the towns and the spreading of the urban areas into the countryside, engulfing the surrounding small villages. While the pattern of the settlements remains unchanged (with a concentration of population in the lowland and coastal areas mainly in large settlements and dispersed settlements in the uplands and high lands), it is clear that the shifting of the rural population continues unabated. The urban centres grew at an annual growth rate of 2.1% between 1976 and 1980, while the rural settlements were losing population at a rate of 1.0% in the same period. Not all rural settlements, however, are losing population. As a general rule the remoter agricultural settlements on the mountains suffer from depopulation, while most lowland villages or those near to towns are gaining.

The urban population of Cyprus is distributed in the six towns, which act as the capitals of the six administrative districts. The urban population, as the rest of the population, is not evenly spread. Due to the rather limited area of the island and the small population, small towns predominate and thus there are not really large urban centres as it happens in most European countries. Similarly to the varied growth rates of the rural settlements, the urban centres have also been growing at different rates. Prior to 1974 (year of the Turkish invasion), Famagusta, Limassol and Nicosia were the fastest growing towns, whereas after 1974 Nicosia, Limassol and Larnaca have shown the highest growth rates (Table 4. Population Growth Rates 1976-1980).

Table 4: Population Growth Rates 1976-1980 (%)

	Urban	Rural	District
Nicosia	+ 3.1	- 0.8	1.8
Larnaca	+ 1.4	- 1.7	- 0.1
Limassol	+ 0.8	- 0.9	+ 0.3
Paphos	+ 1.7	- 1.2	- 0.1
CYPRUS	+ 2.1	- 1.0	+ 0.8
			(all Cyprus)

The pattern of the urban centres has developed on the base of service centres which act as central places. With the exception of capital Nicosia, being central to the whole island, all other towns command peripheral central locations where transport facilities converge upon. (Map II. Administrative map of Cyprus). The central place theory has been used by the Department of Town Planning and Housing to rank the central places in Cyprus into a hierarchical structure, based on the function of settlements and on the services available in each service centre (catchment area and service population accessibility, range of services). In this way a



MAP II: Administrative Map of Cyprus

hierarchy of central places has been established ranging from towns to agrotowns and rural service centres (**Figure 1**. The structure of the Urban System).

The distribution of settlements and population has been related to a policy for three kinds of development areas: (a) The fast-growing economically prosperous areas, which are mainly the towns and the large villages in rich agricultural areas, (b) The slow-growing agricultural villages, particularly dependent on the towns for employment, and (c) the remote mountainous agriculturally poor villages which lose population.

As it has been stressed considerable changes have taken place in the settlement pattern of Cyprus especially since 1974. The apparent trend of growth of the urban centres at the expense of the rural settlements is expected to continue and in fact Cyprus Government's policy is to accommodate the trend. Since 1974, with the movement of the displaced population from the northern occupied part of the island to the southern free part, a new form of settlement has been established, the refugee housing estates, unknown previously in the history of Cyprus. A large number of these Government estates (52) have been constructed largely in the vicinity of towns and peri-urban villages.

In the meantime another new significant change in the structure of Cyprus settlements has been witnessed as a result of tourist boom after 1976. Coastal towns continue to grow, while small coastal villages are growing rapidly and becoming tourist centres housing not only local population but also foreign businessmen who establish their business or offshore companies there.

4. Urbanisation Pressure on Land Use and Housing

With the continuous trends in urbanisation, human settlements, especially the urban and peri-urban areas, are continuing to expand in terms of physical space, mainly at the expense of agricultural land.

All the settlements of Cyprus (urban and rural) cover an area of about 230 sq. miles or about 6% of the total land area of the island. Main and minor state forests cover an area of 18%, while various forms of agriculture (including arable, pasture, rough grazing and scrub) some 75%.

There are no data available on the amount of land converted to urban land or building land, but undoubtedly it is the coastal and peri-urban areas that are being converted mostly. Forest land remains more or less static, because most of it is in Government ownership.

As a result of the political and economic instability which was caused by the Turkish invasion of Cyprus in 1974, land prices for the mid 1974 to 1976 fell or kept rather constant. The impact of these factors was not evenly distributed over the urban space. The land market suffered a greater slump in areas nearer the military occupation zone than in areas further away.

Values for residential land ready for development began rising in 1977 and until

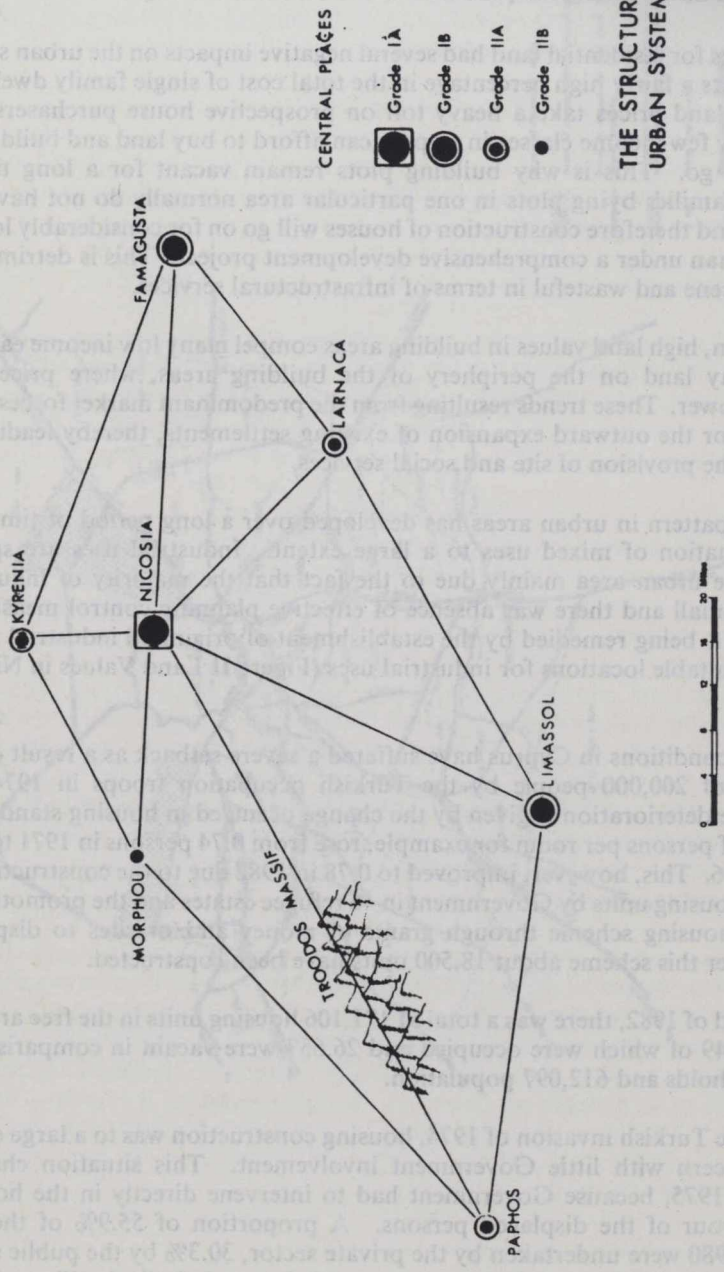


Figure 1: The Structure of the Urban System

the end of 1979, which was a peak year, kept rising at a rate of about 25% to 30% per annum. The major contributing factors for this rise in land values, were the revival of the Cyprus economy, the Government programmes for housing the refugees, as well as the demand for private residential developments. However, these rates of increase slowed down during the period 1980-1982 but are still high.

High prices for residential land had several negative impacts on the urban scene. Land represents a fairly high percentage in the total cost of single family dwellings and therefore land prices take a heavy toll on prospective house purchasers. In particular, very few income classes in Cyprus can afford to buy land and build their houses in one go. This is why building plots remain vacant for a long time. Furthermore families buying plots in one particular area normally do not have the same income and therefore construction of houses will go on for considerably longer time periods than under a comprehensive development project. This is detrimental to the urban scene and wasteful in terms of infrastructural services.

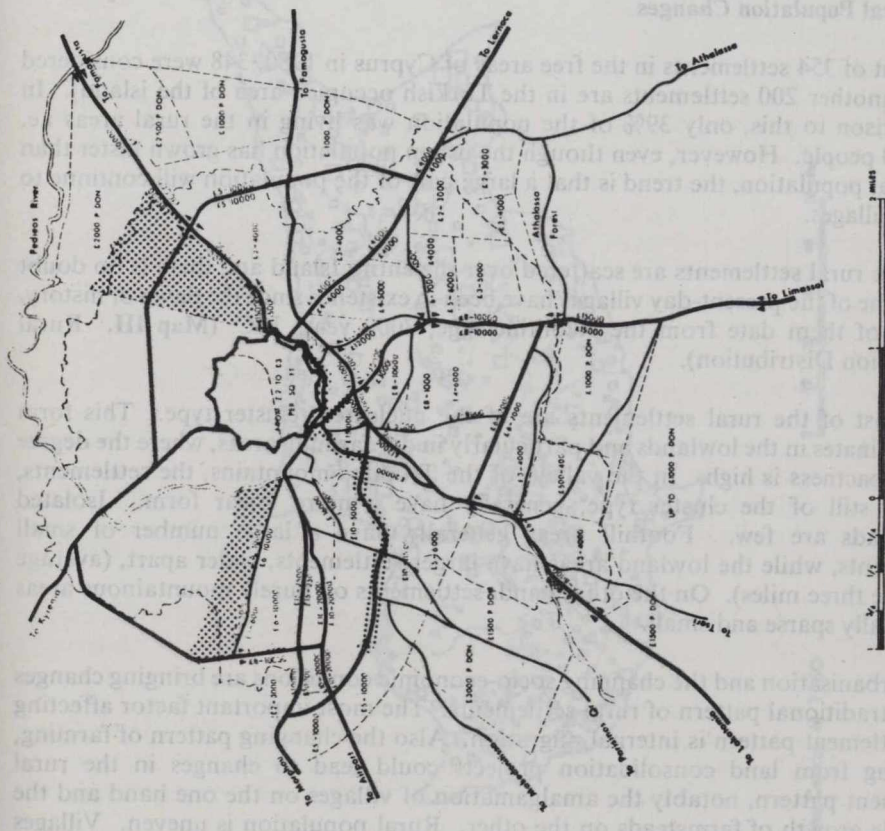
In addition, high land values in building areas compel many low income earning families to buy land on the periphery of the building areas, where prices are considerably lower. These trends resulting from the predominant market forces are a major factor for the outward expansion of existing settlements, thereby leading to pressures for the provision of site and social services.

The land use pattern in urban areas has developed over a long period of time and presents a situation of mixed uses to a large extent. Industrial uses are spread throughout the urban area mainly due to the fact that the majority of industrial concerns are small and there was absence of effective planning control measures. This situation is being remedied by the establishment of originised industrial zones and areas of suitable locations for industrial uses (**Figure II** Land Values in Nicosia and suburbs).

Housing conditions in Cyprus have suffered a severe setback as a result of the displacement of 200,000 people by the Turkish occupation troops in 1974. A measure of the deterioration is given by the change occurred in housing standards. The number of persons per room for example, rose from 0.74 persons in 1971 to 1.52 persons in 1976. This, however, improved to 0.78 in 1982 due to the construction of some 12,120 housing units by Government in 46 refugee estates and the promotion of the self-help housing scheme through grants of money and/or sites to displaced families. Under this scheme about 18,500 units have been constructed.

By the end of 1982, there was a total of 171,106 housing units in the free areas of Cyprus, 144,449 of which were occupied and 26,657 were vacant in comparison to 145,128 households and 612,097 population.

Before the Turkish invasion of 1974, housing construction was to a large extent a private concern with little Government involvement. This situation changed sharply since 1975, because Government had to intervene directly in the housing market in favour of the displaced persons. A proportion of 55.9% of the new dwellings in 1980 were undertaken by the private sector, 30.3% by the public sector and the remaining 13.8% were joint ventures. Of the newly built dwellings during



- Areas of depressed values
- Areas of comparatively depressed values
- Prices on request i.e. they could be almost anything
- Prices per building unit along main roads. (Rural) prices fall up to about 50%
- Prices per acre
- Water Supply Boundary

LAND VALUE

Figure 7

Figure II: Land Value in Nicosia and Suburbs

1976-1980 period, 38.2% were financed by the Government and were exclusively given to refugees, 50.4% by the private sector that largely satisfied the non displaced, while another 11.5% were jointly financed exclusively for the needs of refugees. During 1975-1981 Cyprus Government spent £72.9 m. for the implementation of various housing schemes. The Land Development Corporation and the Housing Finance Corporation were also established for the purpose of meeting the housing needs of the rest of the population, primarily the low and medium-income groups.

Today the main problems of the housing sector are: (a) the satisfaction of the remaining refugee housing needs, (b) the improvement of housing conditions of low and middle-income families, (c) the restraining of land and house prices, (d) the improvement of construction and quality of building materials and (e) the formation of a long-term housing policy.

5. Rural Population Changes

Out of 354 settlements in the free areas of Cyprus in 1980, 348 were considered rural (another 200 settlements are in the Turkish occupied area of the island). In comparison to this, only 39% of the population was living in the rural areas i.e. 199,400 people. However, even though the urban population has grown faster than the rural population, the trend is that a large part of the population will continue to live in villages.

The rural settlements are scattered over the entire Island and there is no doubt that some of the present-day villages have been in existence since the dawn of history. Some of them date from the Neolithic Age, 7000 years B.C. (Map III. Rural Population Distribution).

Most of the rural settlements are of the nucleated, cluster type. This form predominates in the lowlands and particularly in dry farming areas, where the degree of compactness is high. In the valleys of the Troodos mountains, the settlements, though still of the cluster type, generally have a more linear form. Isolated farmsteads are few. Foothill areas generally have a large number of small settlements, while the lowland areas have larger settlements, wider apart, (average distance three miles). On the other hand, settlements on purely mountainous areas are usually sparse and small.

Urbanisation and the changing socio-economic conditions are bringing changes to the traditional pattern of rural settlements. The most important factor affecting the settlement pattern is internal migration. Also the changing pattern of farming, resulting from land consolidation projects could lead to changes in the rural settlement pattern, notably the amalgamation of villages on the one hand and the possible growth of farmsteads on the other. Rural population is uneven. Villages near the towns, i.e. within commuting distance, experience high rates of population increase and physical growth, whereas villages in the remoter mountainous areas with less accessibility are losing population.

In terms of population three areas are identified:

(a) **Rapidly growing villages.** Those within commuting distance from towns and those situated in agriculturally rich and irrigated lowlands or coastal tourist centres.

(b) **Static or slow-growing villages.** Those situated in agriculturally productive areas but where irrigation is limited,

(c) **Declining villages.** The larger group consisting of the remoter villages, where commuting is impractical due to distance and low accessibility and where incomes rely overwhelmingly on agriculture with little or no alternative employment.

One of the main problems in the rural areas is over population in relation to resources, leading to outmigration. A surplus of economically active population has resulted from a natural increase on the one hand and from structural improvements in agriculture on the other (mechanisation methods and land consolidation schemes), which has brought a decrease in demand for labour. As a result, a process of population redistribution has been taking place for some time and it has affected some rural settlements more than others.

Another significant problem in the rural areas contributing to the losing of population, is the deficient provision of services. The lack of fairly large agro-towns in most parts of the countryside makes the provision of intermediate services difficult. Also, 1971 survey revealed a general weakness in the hierarchy of rural service centres at the lower base. The sphere of influence of the rural service centres is generally limited to neighbouring villages and thus large sections of the rural population have to depend for service provision on large centres, such as the main towns, involving long travel for most of their needs.

Urbanisation contributed also in changes to the employment pattern of rural population. The urban areas of Cyprus have an excess of jobs over local labour force. Consequently, they have the potential of not only receiving extra population from the rural areas, but also they offer employment opportunities for commuting workers. A considerable proportion of employed rural population commute to the main towns daily. In 1980 around 15-20% of the labour force of the urban areas were commuting.

Structural changes in employment were striking during the last five years. The total employed outside agriculture has decline while female employment has grown. The sectors that have gained in employment are mainly manufacturing industry, construction trade, business and commerce and services. The increase in construction has been dramatic on account of two factors: the need to rehouse the refugees and the boom in the tourist industry, which is reflected in a dramatic growth in tourism related activities employment (Table 5. Gainfully Employed Population by Sector).

The number of those gainfully employed in agriculture, forestry and fishing was 44.541 in 1980 (in the free areas of Cyprus only) in comparison to 45.200 in 1976. While for the whole of Cyprus the share of those employed in agriculture, forestry and fishing was 41.3% in 1961, it fell to 35.2% in 1971. In the free areas of the island the corresponding figures were 29.4% in 1976 and 25.2% in 1980. It is obvious that

there is a steady movement from the primary level of employment towards the secondary and tertiary ones.

The pattern of distribution of employment has also undergone important changes in the last few years. Between 1976 and 1980 Nicosia has gained 30.4%, Limassol 34.5%, Paphos 34.0% and the free Famagusta area an impressive 123.5%, due mainly to the tourist boom development.

Table 5: Gainfully Employed Population by Sector

Sector	1973		1976		1980	
	000	%	000	%	000	%
Agriculture, Forestry and fishing	45.2	29.4	93.5	37.0	44.5	25.2
Mining & Quarrying	2.3	1.6	3.7	1.5	1.7	1.0
Manufacturing	30.4	19.7	38.1	15.1	38.5	21.8
Electricity, Gas, Water	1.3	0.8	1.2	0.5	1.5	0.8
Construction	10.9	7.1	28.0	11.1	18.1	10.2
Transport & Comm.	7.5	4.9	11.5	4.5	8.3	4.7
Wholesale & Retail	17.0	11.0	21.8	8.6	19.1	10.8
Banking & Insurance	3.2	2.1	2.9	1.1	4.0	2.3
Public Administration	10.7	7.0	10.4	4.1	12.1	6.9
Other Services	25.4	16.5	41.6	16.5	28.7	16.3
TOTAL GAINFULLY EMPLOYED	153.9	100.0	252.7	100.0	176.5	100.0

Figs for 1976 and 1980 refer to Government controlled areas only.

Source: Economic Report, 1980, Dept. of Statistics & Research.

Unemployed 4,300 (2.1% of Economically Active Population).

6. Planning for the Future: Problems and Policies

The recent trends of urbanisation in Cyprus have led to a concentration of population in the main towns. One of the most serious planning problems today is

the sudden expansion of the three main urban centres of Nicosia, Limassol and Larnaca, primarily as a result of the displacement of the Greek population by the Turkish army from all settlements in the northern part of the island. While Larnaca, for example, was planned to grow to 40,000 by the end of this century, it has already surpassed this level, but without the necessary services and infrastructure. Similarly, Limassol was planned to grow for the same period to 135,000, yet it already has over 100,000 due to the settling with refugee population in its urban area. This, in combination with normal urbanisation trends have resulted in the urban areas having in 1980 61.25% of the total population living in the free areas of Cyprus (See Table 3. Population Distribution of Cyprus, Urban and Rural).

Urban development is taking place in a patchy way with a tendency for discontinuity and intrusion into the rural-urban fringe area in all towns. The urban intrusion into the rural areas is causing spatial changes, on a hitherto unprecedented scale. Spread of housing beyond the contiguous building areas in the form of fragmented settlements, premature sub-division of primarily good agricultural land into building plots, traffic oriented establishments, industry, stores and houses along communication axes and a mixture of land use. The most important characteristics of land use change arising from haphazard urban expansion are the shrinking of agricultural land in favour of residential land. Other symptoms are the increase of land values due to demand and land speculation, fragmented settlements and isolated buildings in the countryside, unconsolidated growth coupled with insufficient services; a spatial pattern of land use in the fringe areas that is heterogeneous and unstable.

Considerable parts of the old cores of the urban areas are characterised by structural and spatial obsolescence and decay. Maintenance of buildings is often inadequate and as a result contiguous tracts of obsolete and standard housing as well as commercial establishments form some of the common features of the inner cores. Traffic congestion is aggravated by the obsolete spatial pattern. Generally these areas, common in all towns, inhibit adequate transportation improvements and proper planning. Urban renewal, renaissance and rejuvenation are at an experimental state in the case of old Nicosia (within the walls) in conjunction with conservation projects of particular areas.

Urban growth and development obviously need to be guided and controlled through proper planning. All towns are now the subject of local plans (comprehensive development plans) being prepared by the Department of Town Planning and Housing, which are expected to be implemented soon. These plans indicate the land use and pattern of growth that each town should take, besides the level of population, employment and economic activity. Their aim is to secure orderly development in the interests of amenity, health and welfare to the community.

Until 1972, Cyprus had no comprehensive planning legislation either at the national, regional or the local levels. Physical development was taking place in an ad hoc and haphazard fashion and there was no chance to regulate overall development, which had to be related to problems such as urbanisation and the spread of settlements, regional differences in incomes and service provision and the

distribution of population. Furthermore, these problems have been aggravated since the Turkish invasion of the island and the concentration of the refugee population in the main urban areas.

In order to correct this situation, Cyprus Government has introduced the Town and Country Planning Law of 1972, which is currently partly implemented but it is in the process of full implementation throughout the free areas of the island. The new law will enable the planning of the development of the island as a whole, as well as the development of smaller regions and individual settlements in a comprehensive and integrated way.

The policies adopted constitute a general long term strategy for the island as a whole and more detailed medium and short-term strategies and plans for each of the main towns, providing for growth for the period up to year 2000 and allowing for easy revision and flexibility within the overall strategy are envisaged. The new law reflects these policies and strategies by providing for the preparation of proposals at three scales: (a) the **Island Plan**, (b) **Local Plans** of the major towns, (c) **Area Schemes** either within or outside areas covered by Local Plans. Also a **Development Policy Statement** for the rural areas has been prepared and awaits approval for implementation.

The improvement of the living conditions and the alleviation of the acute problems of the poor mountainous regions of Cyprus, fall primarily within the general programmes of the development of the rural areas. Government policy for these regions is implemented through integrated development programmes and other projects, such as agricultural reform and development, primarily through irrigation schemes, as well as infrastructural works and facility provisions (road improvements, water supply, electricity, health centres etc).

The policy of population distribution and settlement planning has been formulated on the basis of consideration of factors influencing urbanisation. Thus policies aim at growth in the towns, agro-towns, and rural centres, within the framework of a functional hierarchy of service centres, in order to ensure the provision of services according to overall planning standards.

All the above policies and measures it is hoped that will correct irregularities caused by uncontrolled urbanisation if, of course, the political situation in the island will allow the implementation of such policies and measures. Rapid changes due to a peaceful solution may change again short-term policies which have to be reshaped accordingly.

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LAND CONSOLIDATION IN CYPRUS AS FRAMEWORK FOR GENERAL AGRICULTURAL MODERNIZATION AND ITS SOCIAL AND ECONOMIC IMPACTS.*

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The island of Cyprus, with an area of 9,251 sq.Km (3,592 sq. miles) or 6,915,932 donums¹ and a population of approximately 645,500 inhabitants² is located in the Eastern Mediterranean.

With only 36.5% of the population living in rural areas, with about 1/5 of the economically active population engaged in Agriculture and with agricultural produce representing 22% of the island's total domestic exports (the main ones being potatoes, citrus and vine products) the rural sector is still of importance to the island's economy after trade, manufacturing, services and construction.

Like many countries of the world, efficient farming in Cyprus is hampered by its existing defective land tenure structure which is the result of a long historical evolution throughout the ages.

The dominant type of farmland tenure in Cyprus is the privately-owned category. There are no large discrepancies in land ownership and feudal landlordism is not a dominant feature. According to the 1977 census³ as many as 98.5% of the holdings representing 86% of the agricultural land were owned by individuals who may exercise farming activities themselves (full-time or part-time), may rent their land to others or may even utterly neglect it because they may live elsewhere - even abroad (absentee owners).

The average agricultural holding in Cyprus is characterised by its fragmented nature (both in terms of the subdivision of farms into undersized and hence uneconomically viable units and in terms of plot dispersion) and its mixed land tenures.

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¹ One donum = 0.134 hectares = 0.331 acres.

² Estimated in 1982.

³ This census covered only the part of Cyprus under Government Control.

FRAGMENTATION in Cyprus, has resulted largely from the inheritance system under which each parcel of land is equally divided amongst the heirs. Moreover, land in Cyprus is highly esteemed amongst all population classes and to hold land confers prestige and security. The past tradition of a closed economy also tended to favour fragmentation in the terms of plot dispersal. All these factors were facilitated by the 1946 Law which set as limit sizes 1 donum for perennially irrigated land, 2 donums for seasonally irrigated land and 5 donums for non-irrigated or rainfed land.

Fragmentation of holding varies with land-use and physiographic conditions, being more acute in mountainous as well as irrigated areas.

The evolution of land holdings has been characterised by a constant increase in their number from 55,636 in 1931, to 60,179 in 1946 and 69,445 in 1960 while the average holding in Cyprus in 1960 had a size of 46.5 donums and was made up of 9.5 plots with 4.9 donums as the average size of plot.

The 1977 census also provided important land tenure information though no comparison can be made with the previous ones due to the fact that it covered only the area under the Government control. The average farm holding in 1977 was of a size of 34.3 donums, fragmented into 6.4 plots and with 5.3 donums as the average size of plot. Ownerships are however more fragmented than holdings and more numerous. The relationship between holdings and ownerships is approximately 1.3.

The main effects of fragmentation on the agricultural land are, the small and uneconomic size of holdings and plots, the dispersion of plots belonging to the same holding which usually cause losses of time, varying with physiographic region and land use and which could be between 70 to 2,500 miles/year in terms of distance and up to 6 months in terms of time¹, the lack of road access, the irregular shape of plots, the numerous and long boundaries of plots, the great amount of land remaining in undivided shares or held in dual or multiple ownership, difficulties in applying irrigation, soil conservation and other improvement works and the mechanization of agriculture.

Mixed tenures. Two types of mixed tenures exist in Cyprus: individual shares and dual or multiple ownerships.

Land in undivided shares originates from the law of inheritance which entitles each heir to a legal share in each and every part of the property of the deceased. Denominators of shares may reach tremendously high numbers. For example a property has been subdivided in such a manner that today the share of its owners has as a denominator a figure above 40,000,000. Moreover in a sample of 16 villages, land held in undivided shares ranges from 6% to 41%. Apparently such lands are often neglected as disagreement among co-owners hinder their proper exploitation.

Land held in dual or multiple ownership covers cases when the land is owned by one owner and the trees or water on it by others. Survey work in 8 villages showed

¹ Karouzis, G., "Time Wasted and Distance Travelled by the Average Cypriot Farmer to visit his Fragmented and Scattered Plots", **Cyprus Geographical Assos, Reprints**, Nicosia, 1971.

that land held in this form ranged from 6% to 98%.

LAND CONSOLIDATION is the main measure applied in Cyprus to attack fragmentation and improve the defective land tenure system. The scheme which is very comprehensive in content is promoted not as an end in itself but as a framework for general agricultural modernization and development.

Land Consolidation in Cyprus, officially commenced in 1970, following the enactment of the Land Consolidation Law of 1969. Consequently the Land Consolidation Authority was established for the direction, organization, coordination and implementation of land consolidation measures in Cyprus, in accordance with the agricultural policy of the Government, which aims at raising the agricultural income and creating a better working and living environment for the farmers and the rural population.

Since then the Authority, through its executive organ, the Land Consolidation Service, exerts every effort to promote and apply land consolidation measures throughout the country, as it has been accepted that the existence of a rational land tenure system constitutes a fundamental prerequisite for agricultural development.

Even rural landowners who feel strongly about the possession of their ancestral land and literally "cling" to it gradually accepted land consolidation as the measure which solves many of their problems particularly the tenurial ones. This is verified by the fact that at present 17 land consolidation schemes have been completed on a total area of 31,670 donums while another 9 schemes of a total area of 18,860 donums are under implementation, a further 9 schemes on a total area of 33,290 donums are under promotion and a further 11 schemes of a total area of 33,400 donums are under consideration.

Nature of the scheme In simple terms land consolidation in Cyprus is an exchange of property which may entail removal, increase, decrease or expropriation of land based on values assessed at current market prices. Its objectives are:

1. To create economically viable holdings and
2. To remedy the existing defective land tenure structure.

Its measures include:

- (a) The consolidation of fragmented ownerships into compact ones.
- (b) The expropriation of ownerships below certain minimum size limits (2 donums of perennially irrigated, 4 donums of seasonally irrigated, and 10 donums of rainfed land).
- (c) The enlargement of ownerships by buying out land in an area and disposing it to small owners. Government land available in an area may also be utilized to enlarge ownerships.
- (d) The abolition of undivided and dual or multiple ownerships.

- (e) The construction of a modern farm road network serving all the new plots and,
- (f) Landscape renovation.

As a result of the above the following are achieved:

- (a) restructuring of land tenure
- (b) reduction of costs of production
- (c) increase of production and productivity
- (d) a more rational use of land
- (e) increase of farm incomes and raise of rural standards of living
- (f) establishment of the pre-conditions for the encouragement of group-farming.
- (g) Mechanization of agricultural activities.

Land consolidation in Cyprus is promoted democratically, and so far it has been applied on a voluntary basis. Participation of owners ranges from the "per se" representation of owners in the various committees, i.e. the Land Consolidation Committee responsible for decision-making and the preparation of all the plans and the Valuation Committee responsible for the valuation of all properties, to the stage that owners have the right to object to any published plan and can even appeal to court as a last resort.

Procedure: When a group of farmers shows an interest in land consolidation, a meeting is held under the chairmanship of the Land Consolidation Service's District Officer. If this meeting ends successfully a preliminary committee is established which in due course delineates the area to be consolidated and requests from the Department of Lands and Surveys a list of owners. When this list is prepared it is published for inspection purposes by the owners and then republished and finalised. Then a meeting is held by the entitled owners and if during this or subsequent meetings the majority of the entitled owners who also own at least half the total assessed value of the land area, vote in favour of land consolidation, then a land consolidation area is established and this resolution is binding on all owners in the scheme.

Next, a Valuation committee is set up consisting of farmers and government officials who conduct the valuation of all properties within the consolidation area at current market prices and on which subsequently the Valuation List is made. This together with the "preference sessions" during which owners can express their preference for the location of their new holding form the basis for the redistribution of land in new compact holdings of one to three parcels per owner. Small holdings (below 2 donums for permanently irrigated land, 5 donums for seasonally irrigated land and 10 donums for rainfed land) may be compulsorily purchased by the Land Consolidation Authority and used to enlarge other holdings while high value properties, such as citrus groves may be exempted from redistribution.

After land consolidation all plots should be accessible by a farm road and have a regular shape. No plots or holding may be allocated in undivided shares except in very special circumstances while trees and water rights must be allocated together

with the land and never separately. After the new plots are allocated they are demarcated and registered in the names of their new owners and title-deeds are issued and handed over to their owners. A land consolidation scheme is said to be completed when assumption of possession of the new plots by their owners takes place.

Progress and results. The work of the Service since 1970 has evolved in two distinct phases.

The first phase occurred between 1970 and 1974. In this phase parts of five villages all located in rain-fed areas that were about to be irrigated were consolidated with an average rate of acceptance of 71%.

Taking these schemes together, the number of land holders decreased by 38.6%, the number of absentee land holders decreased by 37.1%, mean holding size increased by 53.7%, the total number of plots was reduced by 62.8%, dual ownership of land was abolished, the so-called pygmy holdings (below 2 donums) were abolished roads provide access to all plots and the plots themselves became more compact in shape. Land use changes, recorded soon after the completion of the five schemes have also been quite marked: uncultivated land has decreased from 25.9% to 8.5% of the consolidation area, vegetables have increased from 26.6% to 33.3%, bananas from 1.9% to 6.7% and citrus orchards from 0.6% to 2.4%.

The second phase covers the schemes which were resumed after 1974. During this phase schemes comprise in some cases entire village areas and extend into dryland areas where no irrigation schemes are to be effected.

Survey work conducted in 1982 in the consolidation areas show beyond any doubt that the scheme brought about considerable improvements in the land tenure structure and set the basis for a rational and prolific development of the area. For instance statistical analysis of 8 completed schemes showed a reduction in the number of ownerships held in undivided shares by 86%, rises in capital and labour productivity by 45% and 100% respectively, rises in production from 20% to 700%, elimination of the uncultivated land by 20%, and increases up to 380% in the agricultural incomes (where the scheme was combined with irrigation works).

Time spent to visit the holdings was shortened by approx. one hour per day per operator while 15% of the new ownerships were made viable.

In the first 12 schemes there was decrease in the number of owners by 34%, increase in the size of ownership by 45%, increase in the size of parcel by 141%, decrease in the number of parcels by 57%, and decrease in the number of parcels per ownership by 36%.

Moreover, one of the basic provisions of the scheme is the construction and or improvement of farm roads so that every plot of land is served with access. From 1974 up to now the Authority has constructed in 24 land consolidation schemes of a total area of 49,680 donums about 402 Km of high-quality farm roads. Before the application of land consolidation there existed in these areas only 138.5 Km of farm

roads and there corresponded 1 Km of farm road to every 359 donums of land. After land consolidation this ratio was rendered to 1 Km of farm road to every 123 donums of land. Landowners are charged for half the road construction costs (the other half being paid by the Government) and they pay back their dues on long-term and low interest-rate instalments.

So far the policy of the Authority has been to promote land consolidation with the consent of the majority of the owners with an average rate of acceptance of 74%, though it is empowered to apply the scheme compulsorily. The programme included so far the application of land consolidation on large compact areas but lately the promotion of another form of land consolidation was launched on a small scale affecting a few owners only.

CONCLUSION:

The progress of land consolidation in Cyprus has been fairly rapid despite the problems and difficulties encountered in applying such a comprehensive scheme in a place where landowners are so tied up with their property (mainly because of its ancestral significance) and their main concern is to divide it equally and pass it over to their children so that the property remains within the family.

The phenomenon is widespread in Cyprus and it obviously constitutes a serious obstacle not only to the promotion of land consolidation but also to the agricultural and overall economic development of the island.

However, time and experience have shown that landowners and especially the cypriot farmers have realised the importance of the scheme in rectifying the prevailing fragmented farm structure and request themselves its application in their property. Survey work conducted in 1975¹ at Palekchori village (one of the first five completed schemes) and only a whole year after the completion of the scheme, showed that on the whole no serious socio-psychological problems were created as all the landowners (even those who admitted that they felt somewhat upset and dissatisfied because they had to part with some of their land) seemed to be very concerned and pre-occupied with how to exploit their land in the best possible and most remunerative way. Today, in this very village-community, its inhabitants, request the application of land consolidation in another area of their village which is almost 8 times the size of the consolidation area.

ΠΕΡΙΛΗΨΗ

Στην Κύπρο η αγροτική κτημοσύνη χαρακτηρίζεται από διάφορα δομικά προβλήματα (μικρή και πολυτεμαχισμένη ιδιοκτησία, έλλειψη αγροτικών δρόμων, ταυτόχρονη κατοχή ιδιοκτησίας από δυο ή περισσότερα άτομα, (εξ αδιαιρέτου, δυαδική ή πολλαπλή μορφή ιδιοκτησίας, ακανόνιστο σχήμα τεμαχίων) που αποτελούν ανασταλτικούς παράγοντες στην εκμετάλλευση της γης και κάνουν το γεωργικό επάγγελμα δύσκολο.

¹ Christodoulou F., "Land Consolidation Schemes in Cyprus: the Social Aspects" 1975.

Ο αναδασμός ένα περιεκτικό αναπτυξιακό σχέδιο που άρχισε να εφαρμόζεται στην Κύπρο από το 1970, επιλύει πολλά από τα πιο πάνω προβλήματα (συγκεντρώνει τα πολλά και σκόρπια τεμάχια, αυξάνει το μέγεθος της ιδιοκτησίας, δίνει μονονικά σχήματα στα νέα τεμάχια, καταργεί την αδιαίρετη/δυναδική/πολλαπλή μορφή ιδιοκτησίας, δημιουργεί αγροτικούς δρόμους για όλα τα νέα τεμάχια, εξωραϊζει το τοπίο) και δημιουργεί τις απαραίτητες προϋποθέσεις για μια ορθολογιστική αγροτική ανάπτυξη.

Ο αναδασμός, που εφαρμόζεται μέχρι τώρα κατόπιν απόφασης της πλειοψηφίας των δικαιούχων ιδιοκτητών μιας αγροτικής κοινότητας συμπληρώθηκε σε 17 χωριά σε συνολική έκταση 31.670 σκαλών ενώ εκτελείται/προωθείται σ' άλλα 18 χωριά συνολικής έκτασης 52.150 σκαλών.

ΚΥΠΡΙΑΚΕΣ ΑΜΜΟΥΔΙΕΣ

Από Δρα Γ.Τ. ΚΟΥΜΙΑΔΗ, Γεωγράφο
Ειδικό για την ανάπτυξη παράλιων περιοχών

1. Πρόλογος

Οι πολυποικίλες αμμουδιές της χώρας που αξιοποιούνται κατά τρόπο δραματικό η μια μετά την άλλη μέσα στην επενδυτική δύνη της τουριστικής βιομηχανίας αποτελούν το αντικείμενο της μελέτης τούτης. Στο πρόσφατο παρελθόν ασχολήθηκα και πάλι με τις αμμουδιές όπως και τις αχτές της Κύπρου στη μελέτη μου *Côtes, Plages et Tourisme dans l' Ile de Chypre* (1). Ενώ όμως τότε τα στοιχεία που αφορούσαν περιοχές εντοπισμένες στο βόρειο μέρος του νησιού, που βρίσκεται υπό ξένη κατοχή, ήταν ατελή ή μερικά, καταβάλλεται εδώ μια προσπάθεια να δοθεί πληρέστερη εικόνα για το σύνολο της χώρας. Σημειώνεται μια ελαφρή διαφοροποίηση στους συνολικούς αριθμούς αμμουδιών της Κύπρου ως προς την προηγούμενη μελέτη. Ο λόγος είναι ότι ο όρος «αμμουδιά» μπορεί να ποικίλει από το μερικό στο ολικό με τον εξής τρόπο. Μπορεί ν' αποτελεί τμήμα άλλης μεγαλύτερης, να είναι μια αμμουδιά αυτοτελής ή μια τοποθεσία με δύο ή περισσότερες αμμουδιές. Βασικό κριτήριο διαχωρισμού και καταμέτρησης των αμμουδιών παραμένει η τουριστική αξιοποίηση.

Θ' αναφερθώ στο τί είναι και πώς δημιουργείται μια αμμουδιά. Στη συνέχεια θα δοθούν στοιχεία για την κατανομή των αμμουδιών με βάση τα γεωμορφολογικά κριτήρια των αχτών. Επίσης γίνεται αναφορά στις θερμοκρασίες που επικρατούν στην ατμόσφαιρα και στην επιφάνεια της θάλασσας όπως και στους ανέμους. Τέλος γίνεται η ταξινόμηση των αμμουδιών.

2. Δημιουργία αμμουδιών.(2). Τα κύματα και τα παράχτια ρεύματα της θάλασσας, οι ποταμοί, ο άνεμος (ειδικά για τη δημιουργία παράλιων θινών) εναποθέτουν υλικά αποσπασμένα στην ακροθαλασσιά. Μεταφέρονται από το βυθό της θάλασσας, από άλλο τμήμα της παραλίας, από τις κοίτες των ποταμών. Εναποτίθενται κροκάλες και χαλίκια στα ψηλότερα τμήματα της αμμουδιάς με τη βοήθεια των κυμάτων και άμμος στα χαμηλότερα. Η άμμος προχωρεί και κάτω από το νερό σχηματίζοντας την υποθαλάσσια αμμουδιά. Λεπτότερα ιζήματα εναποτίθενται σε πιο βαθειά νερά. Φυσικά απαντούνται συχνά και αμμουδιές καθαρά αμμώδεις. Στη μεταφορά

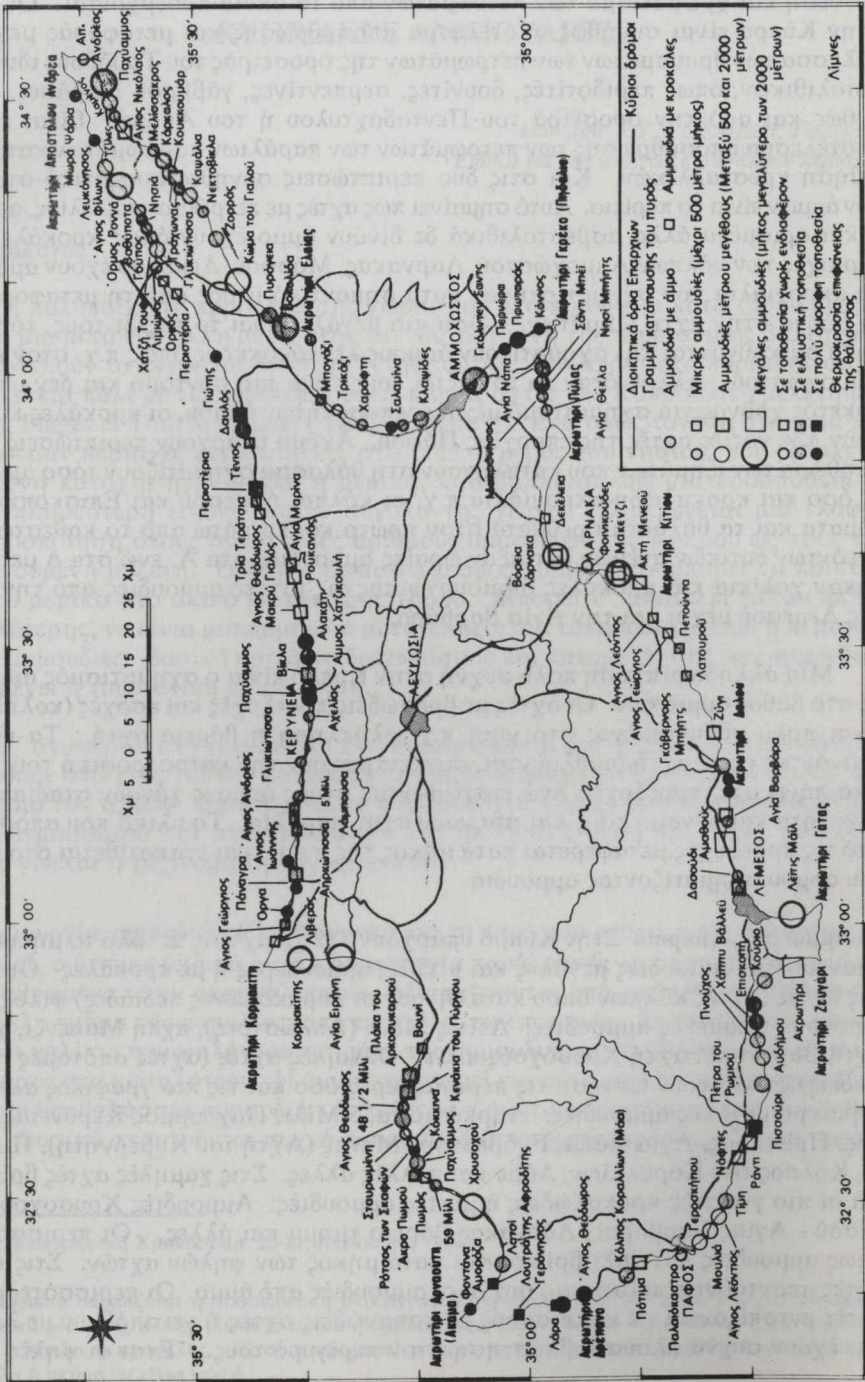
(1) Βλ. Γεωγραφικά Χρονικά αρ. 20-21, Λευκωσία, 1982.

(2) Αμμουδιά ονομάζεται η συσσώρευση υλικών στην ακροθαλασσιά, που είναι πιο χοντρά από τα συστατικά μέρη της ιλύος. Αυτά τα υλικά ή ιζήματα αποτελούνται από λεπτόκοκκη ή χοντρόκοκκη άμμο, βότσαλα ή κροκάλες. Έτσι η αμμουδιά μπορεί να είναι καθαρά αμμουδερή, με χαλίκι, με βότσαλα ή ακόμα να είναι μιχτή.

τους τα υλικά αποχτούν μια στιλπνή επιφάνεια χαρακτηριστική και οι κροκάλες πλατύνονται κατά μήκος του μεγάλου άξονά τους. Αυτά τα υλικά έχουν την σύνθεση και χρωματισμό των πετρωμάτων από τα οποία προέρχονται. Οι άμμοι στην Κύπρο είναι συνήθως αποτέλεσμα αποσάθρωσης και μεταφοράς μέχρι τη θάλασσα των θραυσμάτων των πετρωμάτων της οροσειράς του Τροόδους ιδιαίτερα οφιολιθικών, όπως περιδοτίτες, δουνίτες, σερπεντίνες, γάββροι, διαβάσες, λάβες καθώς και από την οροσειρά του Πενταδάχτυλου ή του Ακάμα. Είναι επίσης αποτέλεσμα αποσάθρωσης των πετρωμάτων των παράλιων μορφωμάτων κατά προτίμηση κρυσταλλικών. Και στις δυο περιπτώσεις σύνηθες συστατικό στοιχείο των άμμων είναι το πυρίτιο. Αυτό σημαίνει πως αχτές με πετρώματα κιμωλίας, αργίλου ή και ορισμένα άλλα ασβεστολιθικά δε δίνουν άμμο έχουν όμως κροκάλες. Οι περιοχές των κόλπων Αμμοχώστου, Λάρνακας, Μόρφου, Λεμεσού έχουν αμμουδερά ακρογιάλια που σχηματίστηκαν κατά σημαντικό μέρος από τη μεταφορά από τα βουνά στην αχτή ιζημάτων. Όσο πιο μεγάλο είναι το ταξίδι τους, τόσο πιο πολύ σμικρύνονται και σχηματίζουν άμμους λεπτόκοκκους όπως π.χ. στον κόλπο Αμμοχώστου. Αλλού όταν το ταξίδι τους είναι πιο σύντομο και δεν υπάρχει αρκετός χρόνος για σχηματισμό μεγάλων ποσοτήτων άμμου, οι κροκάλες κυριαρχούν π.χ. νότιες αχτές της επαρχίας Πάφου. Ακόμα υπάρχουν περιπτώσεις που η πληθώρα των ιζημάτων που καταλήγουν στη θάλασσα σχηματίζουν τόσο αμμουδιές όσο και κροκαλώδη ακρογιάλια π.χ. οι κόλποι Λεμεσού και Επισκοπής. Τα κύματα και τα θαλάσσια ρεύματα στον πρώτο κόλπο κάτω από το καθεστώς των πνεόντων δυτικών ανέμων έφτιαξαν ωραίες αμμουδιές στα Α, ενώ στα Δ μεταφέρθηκαν χαλίκια και κροκάλες δημιουργώντας τις μιχτές αμμουδιές από την πόλη της Λεμεσού μέχρι και την Αγία Βαρβάρα.

Μια άλλη περίπτωση πολύ συχνή στην Κύπρο είναι ο σχηματισμός αμμουδιών στο βάθος ορμίσκων. Οι αχτές με βραχώδεις προεξοχές και εσοχές (κολπίσκoi) είναι πολύ συνηθισμένες στο νησί π.χ. ολόκληρη η βόρεια αχτή. Τα κύματα φτάνοντας στην αχτή διαθλούνται, συγκεντρώνουν την καταστροφική τους ενέργεια πάνω στις προεξοχές, ενώ εισχωρώντας στους όρμους χάνουν σταδιακά την ταχύτητα και δύναμή τους και σβήνουν στην παραλία. Το υλικό που αποσπάται από τις προεξοχές μεταφέρεται κατά μήκος της αχτής και εναποτίθεται στο βάθος του όρμου σχηματίζοντας αμμουδιά.

3. Αμμουδιές Κύπρου. Στην Κύπρο υπάρχουν 782 χμ αχτών. Σ' όλο το μήκος τους απαντούνται αμμουδιές μεγάλες και μικρές, αμμουδερές ή με κροκάλες. Οι χαμηλές αχτές (αχτές κόλπων όπου καταλήγουν οι παρακείμενες πεδιάδες) φιλοξενούν τις πιο εχτεταμένες αμμουδιές: Λεϊτίς Μάιλ (Απλώστρες), αχτή Μακένζι, χρυσή αχτή Βαρωσιού, αχτή Χρυσοχούς κ.λ.π. Οι ψηλές αχτές (αχτές απότομες ή βραχώδεις) φιλοξενούν ωστόσο τις περισσότερες όσο και τις πιο γραφικές αλλά και λιγώτερο μεγάλες αμμουδιές: Αηκώτισσα, 5 Μίλι, Παχύαμμος Κερύνειας, Δαυλός, Πρωταράς, Αγία Νάπα, Γκάβερνορς Μπητς (Αχτή του Κυβερνήτη), Πισσούρι, Κόλπος των Κοραλλίων, Λάρα και πολλές άλλες. Στις χαμηλές αχτές βρίσκονται οι πιο γινωστές κροκαλώδεις ή μικτές αμμουδιές: Αμμουδιές Χρυσοχούς, Λεμεσού - Αγίας Βαρβάρας, Λάρνακας βόρειο τμήμα και άλλες. Οι περισσότερες όμως αμμουδιές και πάλι βρίσκονται κατά μήκος των ψηλών αχτών. Στις ψηλές αχτές απαντούνται επίσης πιο συχνά οι αμμουδιές από άμμο. Οι περισσότερες απ' αυτές εντοπίζονται σε κολπίσκους με κρημνώδεις αχτές ή γειτνιαζουν με λόφους και έχουν συχνά πλούσια βλάστηση στον περίγυρό τους. Έτσι οι ψηλές αχτές



Κύριες αμμουδιές της Κύπρου (Από την Μεγάλη Κυπριακή Γεωγκλωσάδα, Τ. 2, σ. 34)

του νησιού, που καλύπτουν περισσότερα από τα 2/3 του συνολικού μήκους των αχτών του, φιλοξενούν και τις περισσότερες τοποθεσίες με αμμουδιές (70% του συνόλου, 63% των αμμουδιών με άμμο, 82% των αμμουδιών με κροκάλες). Είναι πολύ δύσκολο κάποιος να πει με σιγουριά πόσες αμμουδιές διαθέτει η Κύπρος. Κι αυτό γιατί τα κριτήρια καθορισμού τους ή και εντοπισμού τους μπορούν να ποικίλουν. Για ορισμένους μερικοί κολπίσκοι (και υπάρχουν πάρα πολλοί στο νησί μας) με αμμουδιές στο βάθος τους, αποτελούν και μια αυτοτελή αμμουδιά, ενώ για άλλους αποτελούν μέρος μόνο μιας μεγαλύτερης αμμουδιάς. Παράδειγμα αποτελεί η αχτή των Κοκκινοχωριών. Η νότια αχτή τους φιλοξενεί πολλές μικρές, σχετικά, αμμουδιές από την Αγία Θέκλα μέχρι Α της Αγίας Νάπας: Αγία Θέκλα με δυο, Μακρόνησος με τρεις, Νησί Μπητς με δυο, Σάντυ Μπέυ, Γκόλντεν Σαντς, Αγία Νάπα με δυο. Κι όλες αυτές σε 11-12 χμ αχτών, που μπροστά στα αναρίθμητα χιλιόμετρα της Costa Brava ή της Cora Cabana φαντάζουν πολύ μικροσκοπικές. Για άλλους όλες αυτές οι τοποθεσίες αποτελούν τμήμα της αμμουδιάς της Αγίας Νάπας.

Στην ταξινόμηση που ακολουθούμε εδώ, πλησιάζουμε την πρώτη θεώρηση με σκοπό να καταδειχτεί η ποικιλία και ιδιαιτερότητα των κυπριακών αχτών, όσο και η δυνατότητα ευρείας εκλογής του παραθεριστή, κάτι το ασυνήθιστο διεθνώς για τόσο μικρές κλίμακες.

Τα κατεχόμενα από το 1974 ακρογιάλια του βόρειου τμήματος του νησιού φιλοξενούν 72 τοποθεσίες με αμμουδιές. Μια τοποθεσία μπορεί να διαθέτει μια ή περισσότερες αμμουδιές ή ακόμα να αποτελεί μέρος άλλης τοποθεσίας. Αυτό το τελευταίο γίνεται καθαρό στην περίπτωση της τουριστικής πλαζ Κ.Ο.Τ.- Λάρνακας, που ανήκει στην ευρύτερη αμμουδιά Β Λάρνακας. Τα ελεύθερα ακρογιάλια καταμετρούν 54 τοποθεσίες. Ένα άλλο ενδιαφέρον στοιχείο είναι ότι όπως οι αμμουδιές είναι σκορπισμένες σ' ολόκληρο τον περίγυρο του νησιού, η μεγαλύτερη απόσταση που μπορεί να χωρίζει δυο τέτοιες τοποθεσίες, συχνά πολύ διαφορετικές μεταξύ τους, συνήθως είναι κάτω των 10 χλμ (εχτός στην χερσόνησο Ακάμα). Αυτό εχτιμάται ιδιαίτερα μπροστά στην μονότονη ομοιομορφία που παρουσιάζουν για δεκάδες χιλιόμετρα ξένες αχτές, π.χ. εκείνες του κόλπου του Λέοντα στη μεσογειακή Γαλλία.

Τελευταία, μα όχι λιγότερο σημαντικά, είναι τα στοιχεία των θερμοκρασιών των επιφανειακών θαλάσσιων νερών και του αέρα, των πνεόντων ανέμων και της ηλιοφάνειας. Το νησί βρίσκεται κάτω από το καθεστώς ΝΔ ως Α ανέμων το χειμώνα και ΒΔ το καλοκαίρι. Σ' όλες τις εποχές πνέουν και δευτερεύοντες αντίθετοι άνεμοι. Σπάνια όμως δημιουργούνται ανεμοστρόβιλοι επικίνδυνοι για τη ζωή των λουομένων και αυτοί όχι στη θερινή περίοδο.

Οι αχτές με επικίνδυνα θαλάσσια ρεύματα και σφοδρό κυματισμό είναι πολύ περιορισμένες. Αναφέρουμε εδώ τμήματα των κόλπων Επισκοπής, Μόρφου, της Βόρειας αχτής, τις περιοχές Κάβο Γκρέκο και Ακάμα κ.λ.π. Οι μέσες θερμοκρασίες των νερών αρχίζουν από 16°C για τα πιο ψυχρά στα ακρογιάλια της επαρχίας Πάφου το Φλεβάρη και φτάνουν στους 27.8°C τον Αύγουστο στους κόλπους Αμμοχώστου και Μόρφου όσο και στις αχτές της Κερύνειας. Αυτό σημαίνει δυνατότητα για τους παραθεριστές για κολύμβι με καλό καιρό ως 9 μήνες ή και περισσότερο γι' αυτούς που προέρχονται από τις βόρειες χώρες. Από το Μάη ως το Σεπτέμβρη η μέση ανώτατη θερμοκρασία αέρα των παραλιών ανέρχεται στους

29°C περίπου και η ηλιοφάνεια στην ίδια περίοδο ξεπερνά τις 1700 ώρες, μια διάρκεια που μερικές από τις τουριστικές χώρες δεν διαθέτουν σ' ολόκληρο το χρόνο.

4. Ταξινόμηση αμμουδιών. Το φαινόμενο του τουρισμού στην Κύπρο άρχισε να γίνεται χειροπιαστό με νόημα οικονομικό και κοινωνικό, μόλις τη δεκαετία του 1960, στα χρόνια της ανεξαρτησίας. Ως το 1974 οι κατεξοχή τουριστικές περιοχές του νησιού ήταν η Αμμόχωστος και ο άξονας Λάπηθος - Κερύνεια, δηλ. παραλιακές με πόλους τις δυο κατεχόμενες πόλεις του βορρά. Ο εξωτερικός τουρισμός της χώρας είναι ουσιαστικά παράλιος, κολυμβητικός σε συνδυασμό με θαλάσσια σπορ και ηλιοθεραπεία. Έτσι το τουριστικό ρεύμα μαζικά κατακλύζει τις αμμουδιές με προτίμηση εκείνες που παρέχουν βασικές διευκολύνσεις: καλή πρόσβαση, ευκολίες διαμονής και θαλάσσιων σπορ, εγγύτητα μιας αστικής ή αγροτικής κοινότητας. Υπολογίζεται πως τα 86% και 98% αντίστοιχα των διανυχτερεύσεων των τουριστών σε ξενοδοχεία και άλλα τουριστικά καταλύματα πραγματοποιούνται στις παράλιες περιοχές Πάφου, Λεμεσού, Λάρνακας, Αγίας Νάπας και Παραλιμνίου. Οι ίδιες περιοχές φιλοξενούν τα 73% των ξενοδοχειακών κλινών και τα 98% των κλινών σε τουριστικά διαμερίσματα, μπάγκαλους και βίλες, τα 75% των τουριστικών εστιατορίων. Οι περιοχές αυτές διαθέτουν τουριστικές πλαζ οργανωμένες από τον Κυπριακό Οργανισμό Τουρισμού (από το 1978 στη Λάρνακα, το 1979 στο Δασούδι και το 1983 στη Γεροσκήπου), που χρησιμοποιούνται τόσο από ξένους όσο και Κύπριους. Διαθέτουν μεγάλες λαϊκές πλαζ - Λεϊτίς Μάιλ, Λεμεσός, Μακένζι, Β Λάρνακα, Πρωταράς - που χρησιμοποιούνται περισσότερο από τους Κύπριους. Διαθέτουν τέλος οι περιοχές αυτές, πάμπολλες επί μέρους αμμουδιές διαμορφωμένες από τα παραθαλάσσια τουριστικά καταλύματα, που φιλοξενούν κυρίως ξένους. Τέτοιες αμμουδιές είναι πυκνές στους κόλπους Λεμεσού, Λάρνακας και στις αχτές Αγίας Νάπας - Παραλιμνίου. Στον πίνακα που ακολουθεί ταξινομούνται 126 αμμουδιές και παρέχονται διάφορα στοιχεία γι' αυτές.

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7. Τμήμα Γεωλογικής Επισκόπησης, Αεροφωτογραφίες νότιων παραλιών της Κύπρου

ΠΙΝΑΚΑΣ: ΑΜΜΟΥΔΙΕΣ ΤΟΥΡΙΣΤΙΚΕΣ ΚΑΙ ΑΛΛΕΣ

ΑΜΜΟΥΔΙΕΣ	Μήκος σε μέτρα	Μικτή Κροκάλες Άμμος	Πολύ διοσφη τοποθεσία	Πρόσβαση Καλή Μέτρια	Ευκολίες σπορ	Δυνατότητα ανωρυχικής εκτός κανόμβι	Διαμονή Βίλλα Μπένγκαλου Κατακρήνηση	Άλλου είδους Ξενοδοχεία Διαμερίσματα Βίλλα	Επιτάριοιο Τουριστικό περιπτερό	Αμμουδιό κολυμβησαστη	Αμμουδιό υπό τουρκική κατοχή
Αμμουδιές τουριστικές μ' ευκολίες ή αξιοποιημένες από τον ΚΟΤ											
Κόλπος των κοραλλίων	600	X		X	X	X	X X X		X	X	
Παλαιόκαστρο	27	X		X	X	X	X X		X		
Πάφος Μπητς	300	X	X	X	X	X	X X X X		X	X	
Πλαζ ΚΟΤ - Γεροσκήπου	500	X		X	X				X	X	
Πλαζ ΚΟΤ - Δασούδι Λισού	500	X	X	X	X	X	X X X		X	X	
Αμαθούντα	3200	X	X	X	X	X	X X X X		X	X	
Γκάβερνος Μπητς	360	X	X	X	X	X				X	
Αχτή Μακένζι	4000	X	X	X	X	X	X X		X	X	
Φοινικούδες	500	X		X	X	X	X X X		X	X	
Πλαζ ΚΟΤ - Λάρνακα	500	X		X	X	X	X X		X	X	
Νησί Μπητς	700	X	X	X	X	X	X X		X	X	
Αγία Νάπα	1000	X	X	X	X	X	X X X		X	X	
Πρωταράς	500	X	X	X	X	X	X X		X	X	
Περνέρα	100	X	X	X	X	X	X		X		
Γκόλντεν Σαντς (Χρυσή Αχτή)	6400	X		X	X	X	X X		X	X	X
Απόστολος Ανδρέας	180	X		X	X		X		X		X
Δαυλός	990	X	X	X	X		X		X		X
Φύκια (Κερύνεια)	180	X		X	X		X X		X	X	X
Γλυκιώτισσα	170	X	X	X					X		X
Πέντε - Μίλι	90	X		X	X				X	X	X
Έξι - Μίλι	200	X		X	X		X		X	X	X
Αηρκότισσα	450	X	X	X			X		X		X
Λατσι	2000	X	X	X			X X		X		
Λουτρά της Αφροδίτης	50	X	X	X	X				X	X	
Αμμουδιές τουριστικές σε διαμόρφωση, ανοιχτές στοκοινό											
Πισσούρι	1207	X		X	X	X	X				
Αχτή Μενεού	2000	X	X	X	X	X	X X				
Β. Λάρνακα	5500	X	X	X	X	X	X X X			X	
Μακρόνησος	400	X		X	X	X	X			X	
Σάντι Μπέυ	50	X		X			X			X	
Αλακάτι	540	X	X	X							X
Άμμος Χατζηκουλή	1000	X	X	X							X
Παχύσαμος Κερύνειας	1580	X	X	X							X
Χρυσόχοι	12800	X	X	X			X X				

Αμμουδιές τουριστικές χωρίς ευκολίες									
Λάρα	3140	X	X	X	X				
Μουλιά	1000	X			X			X	
Άγιος Λεόντιος	2140	X	X		X				
Τίμη	2140	X	X		X				
Πέτρα του Ρωμιού	1450	X	X	X	X	X		X	X
Κούριο	2000	X	X	X	X	X		X	X
Λέιτνις ΜάΤλ (Απλώστρες)	7800	X	X	X	X				X
Λεμεσός (πόλη)	2000	X	X		X	X	X	X	X
Αγία Βαρβάρα	2100	X	X	X	X		X		X
Ακρωτήρι Δολού	360		X	X	X				
Αγία Θέκλα	400	X			X				X
Κόννος	100	X		X	X				
Κλαψίδες	800	X			X				X
Σαλαμίνα	500	X		X	X	X			X
Λάμπουσα	130	X			X			X	X
Όργα	300		X	X	X				X
Φοντάνα αμορόζα	270	X	X	X	X				
(ι) Πνούχος	1200	X	X		X	X	X	X	
(ι) Χάπυ Βάλλεϋ	800	X		X	X	X		X	
(ι) Επισκοπή	2800	X		X	X	X		X	
(ι) Δεκέλεια	300	X			X	X	X	X	
Άλλες Αμμουδιές									
Κορμακίτης	2400	X			X				X
Λιβεράς	200		X		X			X	X
Άγιος Γεώργιος	100	X	X		X				X
Πάναγρα	1600	X			X				X
Άγιος Ιωάννης	300		X	X	X	X			X
Άγιος Αντρέας	360	X			X	X		X	X
Αχελίας	90	X			X				X
Μακρυγιαλός	450	X			X				X
Βίγκλα	450	X			X				X
Ρουκανιάς	720	X			X				X
Αγία Μαρίνα	360	X			X				X
Άγιος Θεόδωρος	50				X				X
Τρία Τεράτσια	450	X			X				X
Περιστέρια	1800	X			X				X
Τένιος			X		X				X
Γιώτης	450	X		X	X				X
Περιστέρια	180	X			X				X
Ορκός	1000	X			X				X
Γλυκιώτισσα	1050	X		X	X				X
Λιμιώνας					X				X
Χατζητουφή	270		X		X				X
Γούπος	130	X			X				X
Νησιά	180	X		X	X				X
Βεβήματα	270				X				X
44 Όρμος Ροννά	3200	X			X				X

Άγιος Φίλων	450	X			X								X
Λευκόνησος	270	X		X	X								X
Μωρό Ψάρια	180	X		X	X								X
Παχύαμμος	4000	X		X	X								X
Τσίλιες	450	X			X								X
Καμένος	270	X			X					X			X
Άγιος Νικόλαος	720	X	X		X					X			X
Μοράρα	360	X			X								X
Μελίσσακρος	270	X			X								X
Κάρκαλος	720	X			X								X
Κουκουμάρ	1700	X			X								X
Τράχωνας	700		X		X								X
Καψάλια	540		X		X								X
Νεχτοβίκλα	200		X		X								X
Ζορράς	2840	X	X		X								X
Κώμα του Γιαλού	4000		X		X	X							X
Πυρογεία	1600	X			X								X
Βοκολίδα	2400	X			X								X
Ακρωτήριο Ελαίας	500	X			X								X
Μποκάξι			X		X					X			X
Τρικόξι	200	X			X								X
Χαράφτη	200	X			X								X
Άγιος Λεόντιος	200		X		X								X
Άγιος Γεώργιος	200				X								X
Πετούντα	200		X		X								X
Λατουρού	400		X										X
Ζύγι	2100		X		X	X				X			X
Ακρωτήρι	7000		X	X	X								X
Αυδήμου	1270		X		X	X							X
Ράντι	2000		X		X								X
Νάφτες	2100				X								X
Πότιμα	1600		X		X								X
Άγιος Θεόδωρος	1000		X		X	X							X
Γερβήσος	90		X	X	X								X
59 Μίλι	130		X		X								X
Πωμός	270		X		X	X							X
Άκρο Πωμού	360		X		X								X
Παχύαμμος	1250		X		X								X
Ρότσος των Σκαφών	600		X	X	X								X
Κόκκινα	360		X	X	X					X			X
Σταυρωμένη	360		X		X								X
Άγιος Θεόδωρος	540		X		X								X
48½ Μίλι	270		X	X	X								X
Κενάκια του Πύργου	450		X		X								X
Πλάκα του Αρκοσκαριού	1080				X								X
Βουνί	360		X		X	X							X
Αγία Ειρήνη	16000		X		X								X

Σημειώσεις: (i) Μέσα στις βρετανικές βάσεις

- Πολλές τοποθεσίες αμμουδιών διαθέτουν πάνω από μια αμμουδιά
- Ορισμένες διαφορές που υπάρχουν με το χάρτη οφείλονται σε πραχτικούς λόγους, σε διαφορετική εκτίμηση, όσο και για σκοπούς περισσότερης ανάλυσης
- Ορισμένα μήκη αμμουδιών είναι κατά προσέγγιση
- Οι πληροφορίες για τις αμμουδιές υπό τουρκική κατοχή προέρχονται βασικά από το "Cyprus Study of Tourism Development"

Περίληψη

Οι κυπριακές ακτές παρά το περιορισμένο τους μήκος τους φιλοξενούν μια ποικιλία αμμουδιών που εχτίνονται από τις μικρές μέχρι τις μεγάλες πολλών χιλιομέτρων με άμμο χρώματος γκριζου μέχρι άσπρου (κογχυλιογενούς). Ταξινομούνται 126 αμμουδιές, 72 κατανεμημένες στο βόρειο μέρος και 54 στα ελεύθερα νότια ακρογιάλια του νησιού. Καταδείχεται ο βαθμός τουριστικής χρησιμοποίησης κατά περιοχές και με βάση το κριτήριο τουριστικής αξιοποίησης είτε από τους ιδιώτες είτε από τον Κ.Ο.Τ.

Sommaire

Les côtes de l' île de Chypre malgré leurs longueurs limitées accueillent une variété des plages. Celles-ci vont des très petites aux plages larges de plusieurs Km ayant de couleurs allant du gris au blanc (sables conchyliogènes). 126 plages sont classifiées dont les 72 éparpillées dans la partie nord et 54 dans les littoraux libres du Sud de l' île. On se réfère au degré d' utilisation touristique au niveau de région en ayant comme base le critère de mise en valeur touristique soit privée soit publique (réalisée par l' Office du Tourisme de Chypre)

INTERNATIONAL CONFERENCE ON POPULATION, 1984 (MEXICO CITY 6 - 14 AUGUST 1984)

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Introduction

The International Conference on Population (ICP) was organised by the United Nations Department of International Economic and social Affairs. It was held in Mexico City the world's most populous city between the 6 and 14 August 1984. This was the second world-wide Governmental Conference on Population. The first world Population Conference was held in Bucharest, Romania, in 1974.

The Conference was hosted by the Government of Mexico and was presided by Mexico's Minister of the Interior Mr. Manuel Barlett Diaz. It was addressed by the Secretary-General of the United Nations, Mr. Javier Perez de Guellar, the President of Mexico Miguel de la Madrid, Queen Noor al Hussein of Jordan, Dr. Rafael Salas, Secretary-General of the Conference, and all Heads of Delegations.

The Conference was attended by representatives from nearly all the 158 member states of the United Nations. Delegates and observers numbered about 3000 and included representatives from the specialised agencies and organisations of the United Nations and of the inter-governmental and non-governmental organisations. Delegations consisted of diplomats, politicians, demographers, economists and family planners, headed by a Senior Government Official.

Objectives of the Conference

The 1974 World Population Conference in Bucharest produced a comprehensive World Population Plan of Action. The Plan called for a wide range of national and international policies and programmes in the field of population and development. Over the past decade, the plan has served as the guide to policy development for governments, international organisations and non-governmental organisations.

The consensus reached at Bucharest has facilitated international co-operation and has legitimized the international community's concern over population issues. It helped to bring about changes in perception of the problems of population and increasing commitment to population policies and programmes. Among the notable achievements of the decade 1974-1984 is the virtually universal acceptance by governments of the crucial role of demographic factors in economic and social development.

In 1981, the United Nations Economic and Social Council (ECOSOC) reaffirmed that the principles and objectives of the 1974 World Population Plan of Action remain valid. But, as foreseen in the Plan, some of its goals and recommendations now call for modification in the light of changed economic and social conditions and new knowledge based on experience and research in the field of population, over a decade.

The 1984 International Population Conference has been organised to reaffirm the principles upon which the World Population Plan of Action was founded and to assess the progress made in its implementation with the aim to strengthen and sustain the momentum already generated in population activities; identify emerging problems for concerted action; and initiate programmes in areas where no significant impact has yet been achieved.

The focus of the Conference was on the review and appraisal of the 1974 World population Plan of Action and recommendations for its further implementation. A set of 85 Draft Recommendations for the further implementation of the World Population Plan of Action formed the basis of the work of the Conference¹. The Recommendations emphasize the need to take an intersectoral approach to population development, to enhance the participation and status of women and to take into account the problems raised by internal and international migration and by the changing age structure of populations. Specific goals and policies were outlined in such areas as the improvement of life expectancy at birth, the protection of maternal and child health and the promotion of family planning.

The main issues considered by the Conference were:

- Fertility and family planning.
- Mortality and health policy.
- Urbanization and migration.
- Population resources.
- Environment and development.

Demographic Development in the World Between the First and Second Population Conference in 1974 and 1984

The most significant demographic developments which have occurred in the World during the decade 1974-1984 and were relevant in the examination of the World Population Plan of Action, may be summarised as follows:

Population Growth

The world population, which stood at 3.99 billion in 1974 reached 4.76 billion by 1984. The annual rate of population growth, however, declined from an estimated 2.03 per cent in 1974 to 1.67 in 1984. Despite the observed declines in the global

¹ These Draft Recommendations were prepared by the ICP Preparatory Committee and were adopted by consensus in meetings held in New York during 23-27 January 1984 and 12-17 March 1984.

growth rate, the annual increment to world population has remained almost constant at 78 million throughout the decade, and is expected to increase further to 89 million by 1995-2000.

It is estimated that the world population will continue to grow for another 110 years, although at a progressively slower pace. According to the medium variant, world population will increase to 6.1 billion by the year 2000 and it is projected to stabilize at 10.5 billion by the end of the next century. Ninety-five per cent of this future growth of global population will occur in the developing countries of the world. Sixty per cent of these countries consider their rates of population growth as too high.

The deceleration in the rate of population growth has been a slow process and indications are that unless the current momentum to reduce fertility is maintained, there is a probability that the population growth rate may even increase during the remainder of this century.

Fertility

The global birth rate declined from 32.7 in 1974 to 27.3 in 1984. This implies a 17 per cent decline at the world level and a 19 per cent decline for the developing region as a whole. The levels of fertility continue to vary substantially among developing countries. Several countries of Asia and Latin America have experienced rapid declines in fertility, while very high fertility rates continue to exist in much of Africa and Western Asia.

On the level of desired fertility, the findings of the world Fertility Survey show that while the national averages in total fertility rate among married women varied between 4.8 and 10.7, the average number of desired children ranged only between 3.7 and 4.7. In the United Nations Fifth Population Inquiry conducted in 1982, nearly two-thirds of developing countries indicated that their national level of fertility is high and desire reductions. Government programmes to reduce fertility are available in countries covering 80 per cent of the population of the developing world. However, the levels of desired fertility in developing countries are still higher than the fertility level necessary to eventually attain population stability - approximately 2.1 children per women. Near replacement fertility levels have already been achieved in most developed countries.

The continued momentum of population growth in the developing countries will lead to a doubling by the year 2025 in the number of women in the reproductive ages, currently estimated at 873 million. It has been estimated that at present there are roughly 500 million couples who are in need of population education and family planning services.

Mortality and Morbidity

In the past decade, there has been a worldwide improvement in health and human longevity. In developed countries, the life expectancy at birth has risen to 73 years. Expectation of life at birth in developing countries has risen from 52.4 years in

1974 to 56.6 years in 1984. But this average has fallen short in developing countries by five years of the World Population Plan of Action target of 62 years. There are at least 40 countries in Africa and Asia where life expectancy at birth continues to be less than 50 years. Of equal concern is the inability of some 26 African and Asian countries to attain the Plan of Action target of reducing infant deaths to 120 or less per 1000 live births by 1984. A large differential exists in the level of infant mortality rate between developed and developing countries - 17 per 1000 live births in developed as opposed to 92 per 1000 live births in developing countries.

Migration and Urbanization

Population distribution has emerged as an important concern in many developing countries since the 1974 World Population Conference. In the United Nations Fifth Population Inquiry, 77 countries desired changes in their national distribution, of which 64 were developing countries.

The world is becoming more than urban. The proportion of urban population has increased from 38.0 to 41.3 per cent since Bucharest, and is expected to reach about 50 per cent at the global level by the year 2000. The dominance of primate cities in the process of urbanization has brought in its train a number of problems which very often outweigh the benefits of urban life to its dwellers. There have been important changes in the volume, direction and characteristics of international migration flows since the Bucharest Conference. These relate to four important groups who together constitute international migrants: permanent immigrants, labour migrants, undocumented or illegal migrants and refugees. The human rights and welfare aspects of these population movements are of increasing concern today.

Population Structure

One significant characteristic of the demographic transition, both in developed and developing countries, is the changing structure of the population. Population aging is most pronounced and has become an issue for public policy in developed countries. On the other hand, young-age dependency and the increase in the size of the labour force continue to be important factors in the population structures of developing countries.

The critical role of women in the achievement of population and development objectives has been increasingly recognized during the past ten years. If their potential contribution is to be fully realized in the forthcoming decades, their equal and active participation in development must be explicitly considered.

Review and Appraisal of the World Population Plan of Action

The World Population Plan of Action agreed in 1974 at Bucharest is based essentially on three basic principles:

First, it accepts that the main cause of the population problem is underdevelopment. Population cannot be disassociated from the other determinants of development. It is only one element in a larger system.

Second, it recommends formulation of the population problem in terms which are

not purely demographic, for the demographic variables considered in isolation have less meaning than when considered in their totality.

Third, all couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so.

Nearly all delegations at the Mexico Conference reaffirmed the validity of the principles and objectives of the World Population Plan of Action. Special emphasis was given to the basic proposition in the Plan that population and development are interrelated; that population variables influence and are constituent elements of socio-economic development policies and not substitute for them. Moreover, demographic processes in harmony with social and economic processes could only be ensured under conditions of peace and fruitful co-operation of nations.

Recommendations for the Further Implementation of the World Population Plan of Action

The Recommendations for the further implementation of the World Plan of Action reached by consensus, reaffirms the principles cited by the 1974 World Plan of Action and covers very much the same broad range of issues, namely: the relationship between population and socio-economic development; policies on the reduction of morbidity and mortality; the aging of populations; and the roles of national governments and international organisations. Greater emphasis than before is given to the need for support for family planning services.

The Recommendations include extensive proposals for reducing morbidity and mortality, with specific targets for improvements in life expectancy, infant mortality and maternal mortality. For example, it is recommended that countries with higher mortality levels should aim for a life expectancy at birth of at least 60 years and an infant mortality rate of less than 70 per 1,000 live births by the year 2000. Countries with intermediate mortality levels should aim to achieve a life expectancy at birth of at least 70 years and an infant mortality rate of less than 35 per 1,000 live births by the year 2000.

The targets are backed up by ambitious service goals. Strategies to be considered include emphasis on mother and child health services within primary health care, the introduction and support of a package of specific intervention measures, and massive community-wide education and mobilization to support these.

As regards abortion, the Recommendation urges governments to take appropriate steps to help women avoid abortions and whenever possible provide for the human treatment and counseling of woman who have had recourse to illegal abortion.

Another important Recommendation is the integration of women into all aspects of economic development.

For internal and international migration policy Recommendations are placed

within the context of the protection of human rights and the encouragement of international negotiations.

The need for increased funding for the implementation of population policies, including the provision of family planning services, is emphasised. While urging individual governments to attach high priority to the attainment of self-reliance in the management of their population programmes, the Recommendations also emphasize the responsibility of the international community to give assistance. Adequate and substantial international measures of support and assistance should be provided by developed countries, other donor countries and intergovernmental and nongovernmental organizations.

The UNFPA, with an annual budget approaching U.S. \$150 million, has become the world's single largest nongovernmental funder of population-related activities, and the recommendations single it out for attention by urging that the fund should be strengthened further so as to ensure the more effective delivery of population assistance, taking into account the growing needs in this field. Currently, it has been estimated that the UNFPA is unable to respond to U.S. \$50 million worth of approval requests for aid each year.

Recommendations of Special Importance to Cyprus

Of special importance to Cyprus were Recommendations 36 (originally numbered 34) referring to the prohibition of forcible movement of population from occupied territories and the establishment of settlements in such territories, and Recommendation 47 (originally 45) on the rights of the displaced persons to return to their homes.

The Recommendations as approved by consensus read as follows:

Recommendation 36

Population distribution policies must be consistent with such international instruments as the Geneva Convention relative to the Protection of Civilian Persons in Time of War (1949), wherein article 49 prohibits individual or mass forcible transfers from an occupied territory and forbids the occupier from transferring parts of its own civilian population into the territory it occupies. Furthermore, the establishment of settlements in territories occupied by force is illegal and condemned by the international community.

Recommendation 47

High priority should be placed on the rehabilitation of expelled and homeless people who have been displaced by natural and man-made catastrophes. In all cases, Governments are urged to co-operate fully in order to guarantee that the parties involved allow return of displaced persons to their homes and ensure their right to possess and enjoy their properties and belongings without interference.

The 1984 Mexico City Declaration on Population and Development

The declaration on population and development adopted by consensus provides

a comprehensive account of the deliberations of the Conference.

1. The International Conference on Population met in Mexico City from 6 to 14 August 1984, to appraise the implementation of the World Population Plan of Action, adopted by consensus at Bucharest, ten years ago. The Conference reaffirmed the full validity of the principles and objectives of the further implementation of the Plan in the years ahead.
2. The world has undergone far-reaching changes in the past decade. Significant progress in many fields important for human welfare has been made through national and international efforts. However, for a large number of countries it has been a period of instability, increased unemployment, mounting external indebtedness, stagnation and even decline in economic growth. The number of people living in absolute poverty has increased.
3. Economic difficulties and problems of resource mobilization have been particularly serious in the developing countries. Growing international disparities have further exacerbated already serious problems in social and economic terms. Firm and widespread hope was expressed that increasing international cooperation will lead to a growth in welfare and wealth, their just and equitable distribution and minimal waste in use of resources, thereby promoting development and peace for the benefit of the world's population.
4. Population growth, high mortality and morbidity, and migration problems continue to be causes of great concern requiring immediate action.
5. The Conference confirms that the principal aim of social, economic and human development, of which population goals and policies are integral parts, is to improve the standards of living and quality of life of the people. This Declaration constitutes a solemn undertaking by the nations and international organizations gathered in Mexico City to respect national sovereignty to combat all forms of racial discrimination including **apartheid**, and to promote social and economic development, human rights and individual freedom.
6. Since Bucharest the global population growth rate has declined from 2.03 to 1.67 per cent year. In the next decade the growth rate will decline more slowly. Moreover, the annual increase in numbers is expected to continue and may reach 90 million by the year 2000. Ninety per cent of that increase will occur in developing countries and at that time 6.1 billion people are expected to inhabit the Earth.
7. Demographic differences between developed and developing countries remain striking. The average life expectancy at birth, which has increased almost everywhere, is 73 years in developed countries, while in developing countries it is only 57 years and families in developing countries tend to be much larger than elsewhere. This gives cause for concern since social and population pressures may contribute to the continuation of the wide disparity in welfare and the quality of life between developing and developed countries.
8. In the past decade, population issues have been increasingly recognized as a

fundamental element in development planning. To be realistic, development policies, plans and programmes must reflect the inextricable links between population, resources, environment and development. Priority should be given to action programmes integrating all essential population and development factors, taking fully into account the need for rational utilization of natural resources and protection of the physical environment and preventing its further deterioration.

9. The experience with population policies in recent years is encouraging. Mortality and morbidity rates have been lowered, although not to the desired extent. Family planning programmes have been successful in reducing fertility at relatively low cost. Countries which consider that their population growth rate hinders their national development plans should adopt appropriate population policies and programmes. Timely action could avoid the accentuation of problems such as overpopulation, unemployment, food shortages, and environmental degradation.

10. Population and development policies reinforce each other when they are responsive to individual, family and community needs. Experience from the past decade demonstrates the necessity of the full participation by the entire community and grass-roots organizations in the design and implementation of policies and programmes. This will ensure that programmes are relevant to local needs and in keeping with personal and social values. It will also promote social awareness of demographic problems.

11. Improving the status of women and enhancing their role is an important goal in itself and will also influence family life and size in a positive way. Community support is essential to bring about the full integration and participation of women into all phases and functions of the development process. Institutional economic and cultural barriers must be removed and broad and swift action taken to assist women in attaining full equality with men in the social, political and economic life of their communities. To achieve this goal, it is necessary for men and women to share jointly responsibilities in areas such as family life, childrearing and family planning. Governments should formulate and implement concrete policies which would enhance the status and role of women.

12. Unwanted high fertility adversely affects the health and welfare of individuals and families, especially among the poor, and seriously impedes social and economic progress in many countries. Women and children are the main victims of unregulated fertility. Too many, too close, too early and too late pregnancies are a major cause of maternal, infant and childhood mortality and morbidity.

13. Although considerable progress has been made since Bucharest, millions of people still lack access to safe and effective family planning methods. By the year 2000 some 1.6 million women will be of childbearing age, 1.3 billion of them in developing countries. Major efforts must be made now to ensure that all couples and individuals can exercise their basic human right to decide freely, responsibly and without coercion, the number and spacing of their children and to have the information, education and means to do so. In exercising this right, the best interests of their living and future children as well as the responsibility towards the community should be taken into account.

14. Although modern contraceptive technology has brought considerable progress into family planning programmes, increased funding is required in order to develop new methods and to improve the safety, efficacy and acceptability of existing methods. Expanded research should also be undertaken in human reproduction to solve problems of infertility and subfecundity.

15. As part of the overall goal to improve the health standards for all people, special attention should be given to maternal and child health services within a primary healthy care system. Through breast-feeding, adequate nutrition, clean water, immunization programmes, oral rehydration therapy and birth spacing, a virtual revolution in child survival could be achieved. The impact would be dramatic in humanitarian and fertility terms.

16. The coming decades will see rapid changes in population structures with marked regional variations. The absolute numbers of children and youth in developing countries will continue to rise so rapidly that special programmes will be necessary to respond to their needs and aspirations, including productive employment. Aging of populations is a phenomenon which many countries will experience. This issue requires attention particularly in developed countries in view of its social implications and the active contribution the aged can make to the social, cultural and economic life in their countries.

17. Rapid urbanization will continue to be a salient feature. By the end of the century, 3 billion people, 48 per cent of the world's population, might live in cities, frequently very large cities. Integrated urban and rural development strategies should therefore be an essential part of population policies. They should be based on a full evaluation of the costs and benefits to individuals, groups and regions involved, should respect basic human rights and use incentives rather than restrictive measures.

18. The volume and nature of international migratory movements continue to undergo rapid changes. Illegal or undocumented migration and refugee movements have gained particular importance; labour migration of considerable magnitude occurs in all regions. The outflow of skills remains a serious human resource problem in many developing countries. It is indispensable to safeguard the individual and social rights of the persons involved and to protect them from exploitation and treatment not in conformity with basic human rights; it is also necessary to guide these different migration streams. To achieve this, the cooperation of countries of origin and destination and the assistance of international organizations are required.

19. As the years since 1974 have shown, the political commitment of Heads of State and other leaders and the willingness of Government to take the lead in formulating population programmes and allocating the necessary resources are crucial for the further implementation of the World Population Plan of Action. Governments should attach high priority to the attainment of self-reliance in the management of such programmes, strengthen their administrative and managerial capabilities, and ensure coordination of international assistance at the national level.

20. The years since Bucharest have also shown that international cooperation in the field of population is essential for the implementation of recommendations agreed

upon by the international community and can be notably successful. The need for increased resources for population activities is emphasized. Adequate and substantial international support and assistance will greatly facilitate the efforts of Governments. It should be provided wholeheartedly and in a spirit of universal solidarity and enlightened self-interest. The United Nations family should continue to perform its vital responsibilities.

21. Non-governmental organizations have a continuing important role in the implementation of the World Population Plan of Action and deserve encouragement and support from Governments and international organizations. Members of Parliament, community leaders, scientists, the media and others in influential positions are called upon to assist in all aspects of population and development work.

22. At Bucharest, the world was made aware of the gravity and magnitude of the population problems and their close interrelationship with economic and social development. The message of Mexico City is to forge ahead with effective implementation of the World Population Plan of Action aimed at improving standards of living and quality of life for all peoples of this planet in promotion of **their common** destiny in peace and security.

23. In issuing this declaration, all participants at the International Conference on Population reiterate their commitment and rededicate themselves to the further implementation of the plan.

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INTRODUCTION

Methods of mapping and programming a groundwater investigation vary throughout the world in part because of variations in the nature and scope of investigation and in part because of variations in the local understanding of how ground water occurs and the way in which it is to be located, interpreted and divided. The purpose of this report is to provide a guide to the selection of a method of investigation and to provide a checklist of factors which should be considered and which should be used to select the method of investigation. The report is intended for use by hydrologists and hydrogeologists in the selection of a method of investigation. The report is intended for use by hydrologists and hydrogeologists in the selection of a method of investigation.

The key to successful programming for a groundwater investigation is the obtaining of essential information on the geology and hydrology of the area. Knowledge of the hydrology is essential because it determines the source of supply and discharge of groundwater. The hydrogeology is essential because it determines whether precipitation is infiltrated into the ground-water table and whether it may result in runoff and whether it may be stored in the ground. It may result in runoff and whether it may be stored in the ground. It may result in runoff and whether it may be stored in the ground. It may result in runoff and whether it may be stored in the ground.

The second key to a successful groundwater investigation is knowledge of the geology. Geology is essential because it determines the source of ground-water and the amount of recharge. The amount of recharge is determined by the amount of precipitation, the amount of infiltration, and the amount of ground-water available. The amount of infiltration is determined by the amount of precipitation, the amount of infiltration, and the amount of ground-water available. The amount of infiltration is determined by the amount of precipitation, the amount of infiltration, and the amount of ground-water available.

GENERAL RECOMMENDATIONS FOR INVESTIGATION

Groundwater is a natural resource which is essential for the survival of the human population. It is a resource which is essential for the survival of the human population. It is a resource which is essential for the survival of the human population. It is a resource which is essential for the survival of the human population.

Report prepared in September 1979

GROUNDWATER EXPLORATION IN CYPRUS*

By *TH. PANTAZIS Ph.D., D.I.C., B.Sc., F.I.M.M., Assoc. Prof.*
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INTRODUCTION

Methods of planning and programming a groundwater investigation vary throughout the world, in part due to wide variations in the nature and scope of investigations, and in part due to variations in the degree of understanding of how ground water occurs, and the best way for it to be found and properly utilized. The methods of investigation vary from the employment of a "water witch", or diviner, to carry a forked stick over the area under consideration and supposedly pick the best area for a well, to a full-scale geologic, hydrogeologic and hydrologic investigation of the area in question, culminating in recommendations for optimum development of the ground-water resources.

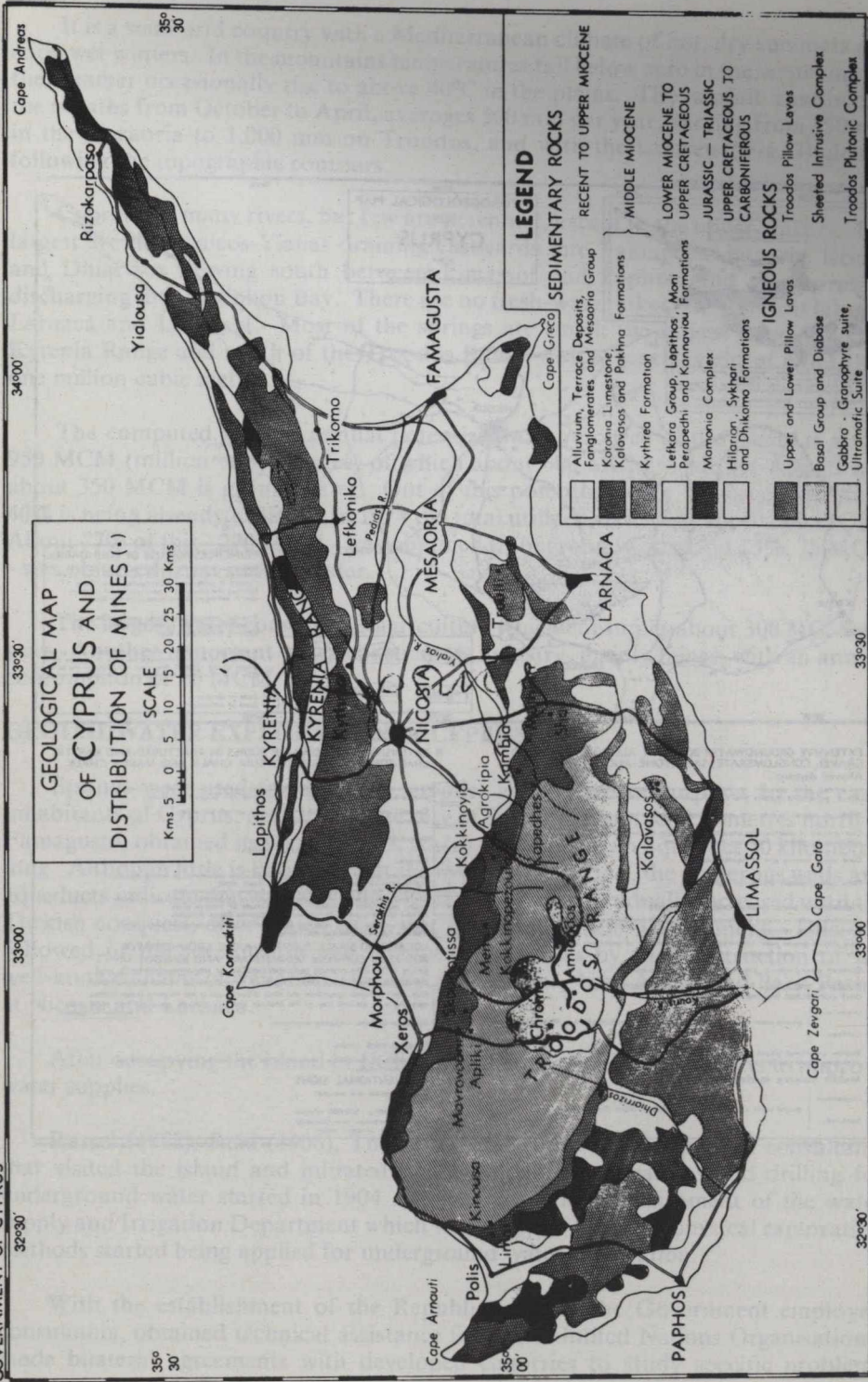
The key to successful programming for a ground-water investigation is the obtaining of essential information on the geology and hydrology of the area. Knowledge of the hydrology is needed to determine the sources of supply and discharge of ground-water. The ultimate supply for practically all usable ground-water is precipitation. This precipitation may infiltrate to ground-water directly, or it may result in runoff and stream flow which infiltrates in part. Excess water applied to the land for irrigation, which is not used by the crops but sinks into the ground, may make significant contributions to ground-water. Quantitative evaluation of all these items of hydrology is essential to complete understanding of ground-water occurrence and availability.

The second essential item in a ground-water investigation is knowledge of the geology. Geologic formations form the reservoir which contains ground-water, and their conditions of permeability and storage capacity are instrumental in determining the amount of ground-water yielded to wells, and the amount of ground-water available. Both the rock type, varying from sand and gravel to igneous and metamorphic, and the structures affecting the rocks, such as faults and folds, must be known for an understanding of a ground-water reservoir and its behaviour.

GENERAL BACKGROUND INFORMATION

Cyprus, an island covering 9,250 square kilometres, is situated in the north-eastern corner of the Mediterranean Sea, centred on latitude 35°00N and longitude 33°15E. Its maximum dimensions are about 100 kilometres from north to south and 225 kilometres from north-east to south-west (Fig. 1 & 2).

* Paper prepared in September 1979



**GEOLOGICAL MAP
OF CYPRUS AND
DISTRIBUTION OF MINES (•)**

SCALE
Kms 0 5 10 15 20 25 30 Kms

LEGEND

- SEDIMENTARY ROCKS**
- RECENT TO UPPER MIOCENE
 - Alluvium, Terrace Deposits, Fanalluvium and Mesaoria Group
 - MIDDLE MIOCENE
 - Karaina Limestones
 - Kalavassos and Paphos Formations
 - Kyrenia Formation
 - LOWER MIOCENE TO UPPER CRETACEOUS
 - Lefkara Group, Lapithos, Moni, Perapethi and Kannaviou Formations
 - JURASSIC — TRIASSIC
 - Mamonia Complex
 - UPPER CRETACEOUS TO CARBONIFEROUS
 - Hilarion, Sykhari and Dhikomo Formations
- IGNEOUS ROCKS**
- Upper and Lower Pillow Lavas
 - Troodos Intrusive Complex
 - Troodos Plutonic Complex

Compiled, drawn and photographed by Geological Survey Department

FIGURE 1

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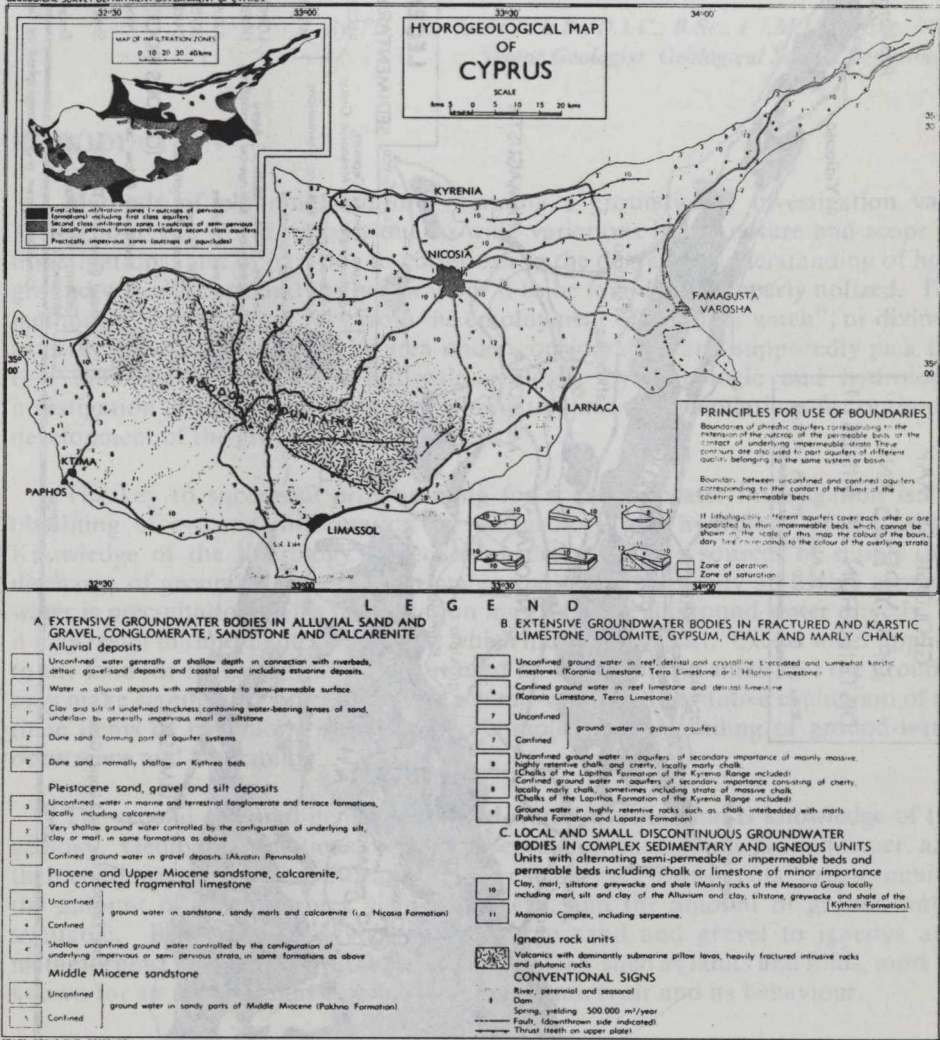


FIGURE 2

Compiled, drawn and photographed by Geological Survey Department.

It is a semi-arid country with a Mediterranean climate of hot, dry summers and cool, wet winters. In the mountains temperatures fall below zero in the winter and in the summer occasionally rise to above 40°C in the plains. The rainfall, confined to the months from October to April, averages 500 mm per year, varying from 350 mm in the Mesaoria to 1,000 mm on Troodos, and with the isohyets (Fig. 3) closely following the topographic contours.

Cyprus has many rivers, but few are perennial, except in the upper reaches. The largest are the Pedieos-Yialias draining eastwards into Famagusta Bay, the Kouris and Dhiarizos flowing south between Limassol and Paphos, and the Serrakhis discharging into Morphou Bay. There are no fresh-water lakes: only the salt lakes at Larnaca and Limassol. Most of the springs are small; the largest issue from the Kyrenia Range and south of the Troodos Range with a yearly yield of more than one million cubic metres.

The computed average annual potential water resource of the Island is about 950 MCM (million cubic metres) of which about 600 MCM is surface run off and about 350 MCM is groundwater. Out of this potential water resource more than 40% is being already utilized. In 1974 the total utilized water was about 360 MCM. About 77% of this - 270 MCM - was obtained from groundwater, and 23%, 75 MCM - was obtained from surface water.

The largest water consumer is agriculture which consumes about 300 MCM per year. Another important water consumer is industry, mainly mines, with an annual consumption of 10 MCM.

GROUNDWATER EXPLORATION IN CYPRUS

Springs were used for domestic supplies and irrigation purposes by the early inhabitants of Cyprus, and the ancient city of Salamis, about ten kilometres north of Famagusta, obtained its water from Kythrea by means of an aqueduct 40 kilometres long. Although little is known about the intervening period, the numerous wells and aqueducts indicate that the need and utilization of water gradually increased until the Turkish conquest, after which there was a period of little development. This was followed in the seventeenth and eighteenth centuries by the construction of the well-known chains of wells and aqueducts of Silikdar, Arab Ahmet and Bekit Pasha, at Nicosia and Larnaca.

After occupying the island in 1878, the British made increased efforts to improve water supplies.

Russel (1882), Reid (1906), Thompson (1927) are among the first consultants that visited the island and initiated hydrogeologic investigations and drilling for underground water started in 1904. A year after the establishment of the water supply and Irrigation Department which was set up in 1937, geophysical exploration methods started being applied for underground water exploration.

With the establishment of the Republic in 1960 the Government employed consultants, obtained technical assistance from the United Nations Organisations, made bilateral agreements with developed countries to study specific problems

CYPRUS AVERAGE ANNUAL PRECIPITATION IN MILLIMETRES (1941-70)

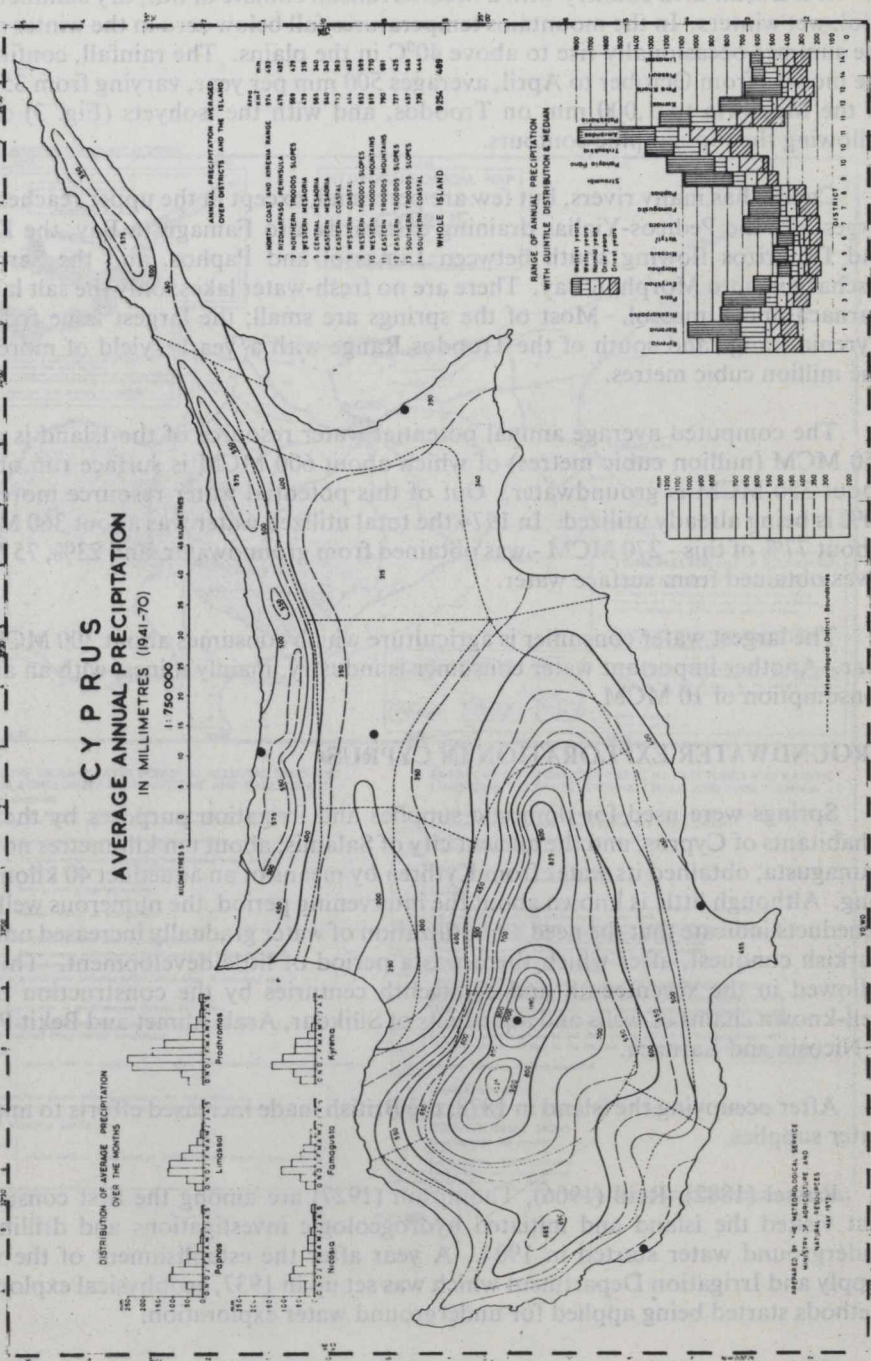


FIGURE 3

related to underground water exploration and in 1963 initiated a National wide Groundwater Survey Project with the United Nations Development Programme and the Geological Survey Department, which was concluded in 1969.

During the project existing data were evaluated and hydrogeological surveys were organised under the guidance of consultants. In this respect geophysical surveys were applied for underground water exploration and detailed hydrogeological investigations including water balance calculations were made in all important areas and a hydrogeological map and an Interim Assessment of the water of the whole of Cyprus were prepared. Furthermore the project redefined in a broad sense the previously applied distinction between first-class and second-class aquifers, on the basis of a probable yield of more or less than five cubic metres per hour. First-class aquifers are now those that are sufficiently thick and of wide lateral extent and continuity over most of the aquifer area. These are found only in the western Mesaoria, south-eastern Mesaoria and the Akrotiri Peninsula and lend themselves to regional analysis and management. It is believed that no other first-class aquifers, as defined above, exist on the island. Second-class aquifers consists of previous layers of highly variable thickness and limited lateral extent (TAHAL, 1969: P.N. 880, p.11). They are associated with the fractured and karstic rocks of the Kyrenia Range and the reef limestone, gypsum and calcareous rocks surrounding the Troodos massif. Small coastal belts and river deposits, are also regarded as second-class aquifers.

OCCURENCE AND DISTRIBUTION OF AQUIFERS

For the purpose of hydrogeological mapping, Cyprus can be divided into three main categories on the basis of the occurrence of its groundwater, which is controlled primarily by lithology, and to a lesser extent by structure, as shown in Fig. 1. A comparison of the distribution of the various aquifers (Fig. 2) with that of annual precipitation (Fig. 3) reveals that they are inversely related.

The most extensive and continuous groundwater bodies occur both in the unconsolidated alluvial sand and gravel deposits and in associated, partly cemented, yet porous sandstone and calcarenite. These rocks possess good storage and water-transmitting characteristics. Belonging to this group are the first-class aquifers mentioned above and also some of the second-class aquifers in river valleys and along coastal regions, as well as the sandy members of the Pakhna in the Maroni area. In places, along the coast, the first-class aquifers suffer from varying degrees of sea-water intrusion, and measures are being considered to remedy this. Although all the aquifers of this group comprise only 15 per cent of the area of Cyprus, they supply almost half of the groundwater (table 1).

Next in importance, also containing extensive groundwater bodies, are the fractured and karstic limestone, dolomite and gypsum deposits. The groundwater is transmitted through solution channels which commonly give rise to springs. Also grouped together with these rocks are deposits of chalk with bands of marl and chert.

The marly chalk, which is very retentive, forms a transitional type of rock to the third category. The lenticular limestones of the Kyrenia Range and the far more widespread chalk surrounding the Troodos Complex are significant second-class

Table 1. Groundwater resources of Cyprus

Accuracy: storage ± 30 per cent
balance ± 20 per cent

Areas ^{a/}	Total catchment area of aquifer system		Total water in storage	Useful water in storage ^{b/}	Optimum additional storage ^{c/}	Average replenishment	Present extraction wells and springs	Outflow to sea ^{d/}	Change of storage ^{e/}	Water available for exploitation ^{f/}
	(Sq km)	Aquifer outcrop area								
<i>Investigated</i>										
A. Western Mesaoria	485	395	800-1300	130 ^{g/}	600	62	86	2.5	-26.5	-
B. South-eastern Mesaoria	520	490	600	300	160	25	47	0	-22	-
C. Akrotiri	133	92	90	>6	6	18.5	15	4.5	-1	-
D. Central Mesaoria	695	250	320	170 ^{g/}	60 ^{g/}	14	14 ^{g/}	1 ^{g/}	-1 ^{g/}	-
E. Maroni-Anglisidhes	400	117	>90	>6	1	8	1.5	6.5	-	3
F. Ayia Irini-Kormakiti	110	80	35	3	6	6.4	2.6	3.8	-	+
G. Karpas Peninsula	208	120	>70	25 ^{g/}	4 ^{g/}	20	8	12.5	-0.5	+
H. Kouris Valley	225	65	125 ^{g/}	45	0 ^{g/}	30	14	16	-	8
I. Larnaca	310	200 ^{g/}	230 ^{g/}	40 ^{g/}	?	28	8 ^{g/}	20 ^{g/}	?	?
J. Kyrenia Range	82	82	160 ^{h/}	>20	0	11.5	11.5	0	0	5 ^{i/}
K. Kyrenia Coast	400	160	2	0.5	0	25	9	16	0	1.5
M. Pissouri-Paramali	350	320	300 ^{g/ h/}	10 ^{g/}	0	53	7 ^{g/}	46 ^{g/}	-	2 ^{g/}
N. Paphos:										
a) Coastal area	100	100	32	20	16	13	7	6.2	-0.2	1
b) River valleys	18	18	27	20	0	13	2	11	-	10
O. Polis	157	75	140 ^{g/}	35 ^{g/}	0	25 ^{i/}	5 ^{g/}	20 ^{g/}	+	8
Subtotal	4,193	2,596	>2,994	820	853	352.4	237.6	166.0	-51.2	38.5
Rounded	4,200	2,560	>3,000	800	860	350	235	165	-50	40
<i>Not investigated</i>	5,050	1,570	?	?	?	110	55	45	-	?
Total	9,259	4,130	>3,000	>800	850	450	290	210	-50	>40

a/ Approximately as shown in figure 4.

b/ Including all water that could be temporarily pumped without causing serious damage to the aquifer or could be economically withdrawn.

c/ Volume in the porous formation that could be filled with water by artificial infiltration without considerable loss of water to the sea or to springs.

d/ Including effluent water in stream-beds.

e/ Dashes (-) indicate occurrence of a slight negative trend in the recent past.

f/ Replenished water, not including water in storage.

g/ Estimated quantity.

h/ To about 100 metres below water-table

i/ Water from springs escaping during winter.

j/ 3 million cubic metres imported water.

k/ Mostly in the Troodos Mountains and Northern Mesaoria.

aquifers although the latter yields less to wells. The largest springs of the island drain both these aquifers. Groundwater-bearing reef limestone and gypsum occur in the south-eastern Mesaoria, along the northern foot-hills of Troodos and in the Polis-Paphos area. The widespread chalks and marls of the Pakhna Formation are not generally regarded as being good aquifers, but they contain sandy intercalations which yield good quantities of groundwater to wells, particularly in the lower part of the Kouris River area. Springs and seepages are also common in these chalky areas of the southern slopes of Troodos but, because of the high retention of the chalks, drillholes generally give very little water. Balance calculations show that a large quantity of the rainfall is absorbed by these rocks and contribute only about one-tenth of the total groundwater supply.

The third category, consisting of sedimentary rocks with poor transmitting properties, as well as the igneous rocks, accounts for about two-thirds of the area of Cyprus. Locally, the former may have small, usually discontinuous, groundwater bodies in semi-permeable beds, but as a whole they are considered to be aquicludes, such as the clay, marl and silt deposits of the Mesaoria plain. Deposits of this type form also the base of the first class aquifers in this area, in places separating them into smaller units. The Kythrea Formation, consisting of alternating marl, siltstone, greywacke and shale, yields only small quantities of groundwater to hand-dug wells. Some of the water in these sedimentary areas is variably mineralized. A large area of south-western Cyprus is occupied by the Mamonía Complex, which is generally an aquiclude, although some serpentine masses may locally yield a little water. The igneous rocks as a whole are relatively poor in groundwater. However, they are successively more aquiferous from the peripheral pillow lavas, through the heavily fractured intrusives, to the plutonic core.

PROGRAMMING THE GROUNDWATER EXPLORATION

The first step in programming a groundwater investigation in Cyprus is the collection of all available existing data on the hydrology and the geology of the area in question. The existing topographic maps and the detailed geological map for the whole of Cyprus and the existing general hydrologic data make this task very easy. Based on the availability of data hydrologic, geologic or other surveys are initiated so that existing data are verified and completed for the purpose of the project.

The next step after collection of basic data is the revised mapping of the area in question in the field using both topographic maps and aerial photos. To supplement the surface geologic studies if there are no boreholes in the area or if existing boreholes are not considered adequate, drilling and geophysical surveys are used. Boreholes are located on the most critical places where further knowledge of subsurface conditions is essential. Logging of drill holes is not limited to lithologic but self potential and resistivity logging has been utilised a great deal since 1965.

The Geological Survey Department, being aware of the advantages of the conjunctive use of hydrogeological and geophysical techniques made serious attempts at the early stages of its development and organisation to introduce geophysical techniques in groundwater exploration. This was achieved with considerable success

during the United Nations Special Fund Project which carried out a survey of groundwater and mineral resources of Cyprus. During the time of the Project, which lasted from 1963-1969 a sound basis was laid down for hydrogeophysical exploration. The Department was properly equipped and local staff was adequately trained so as to be in a position to continue after the termination of the Project. Extensive geophysical surveys were carried out all over the Island in conjunction with geological and hydrogeological investigations.

After the termination of the United Nations Special Fund Project the Department continued to make extensive use of geophysical methods in groundwater exploration programmes, such as the "Paphos Irrigation Project". Geophysics proved a fast and economical means available to the hydrogeologists of the Department.

The geophysical methods that have been employed by the Geological Survey Department in groundwater exploration include the electrical resistivity, the electromagnetic (turam) and the seismic refraction.

The electrical resistivity method accounts for the greater bulk of hydrogeophysical exploration in Cyprus and has been applied with variable success over sedimentary formations.

The turam method, originally introduced for mineral exploration, has found extensive use in fault detection and tracing over igneous rocks and particulars over the pillow lavas. This method has been employed with success for the detection of water bearing faults and fault zones that could not be detected by geological means alone.

The seismic refraction method has generally been used to a smaller extent and in particular in the case of alluvial and fluvial aquifers. Although this method can yield extremely accurate results it is quite costly and cannot be employed extensively. It has mainly been used as a substitute of the resistivity method in situations where the latter method could not provide useful or meaningful results.

In conclusion it can be said that the application by the Geological Survey Department of geophysical methods in groundwater exploration has proved quite advantageous.

Valuable characteristics of the aquifer are obtained by pumping tests. They obviously give an indication of the rate at which water can be pumped, and through the measure of drawdown, the ease with which the water is yielded. They also give us permeability or transmissibility which, with the dimensions of the aquifer and the hydraulic gradient, determine ground-water movement. Thus movement within the reservoir can be calculated, as well as subsurface inflow to and outflow from the groundwater basin. Where the aquifer pumped is entirely under unconfined or water table conditions, aquifer tests give us a storage coefficient which is equal to specific yield, essential in determining storage capacity. However, some degree of confinement is much more common than simple water-table conditions, and where confinement exists, the storage coefficient does not equal specific yield.

Examples of test pumping results from Paphos and Pitsilia are shown in Fig. 4, Fig. 5, Fig. 6, Fig. 7 and Fig. 8.

Measurement of hydrologic quantities including precipitation, stream flow, and ground-water levels is continued throughout the investigation. The object is to obtain quantitative figures for all the items in the hydrologic equation. After this has been done for the years of the investigation, either a complete hydrologic balance, or a balance for the ground-water body alone, can be made for these years.

Sampling and analysis of water is done on a routine basis and based on these results the aquifers are differentiated in various categories with respect to their suitability for water supply, agricultural or other use.

Based on all the above information a comprehensive report is prepared including geological maps and cross sections and the results of the drilling, geophysical, aquifer testing and water quality programmes.

After the above comprehensive investigation of a groundwater region or basin is completed, where possible, a model is constructed to simulate its hydraulic characteristics.

In Cyprus major water development projects integrate both surface and groundwater resources. It is in this respect that engineering-economic appraisal of various possible schemes have been and are still under operation.

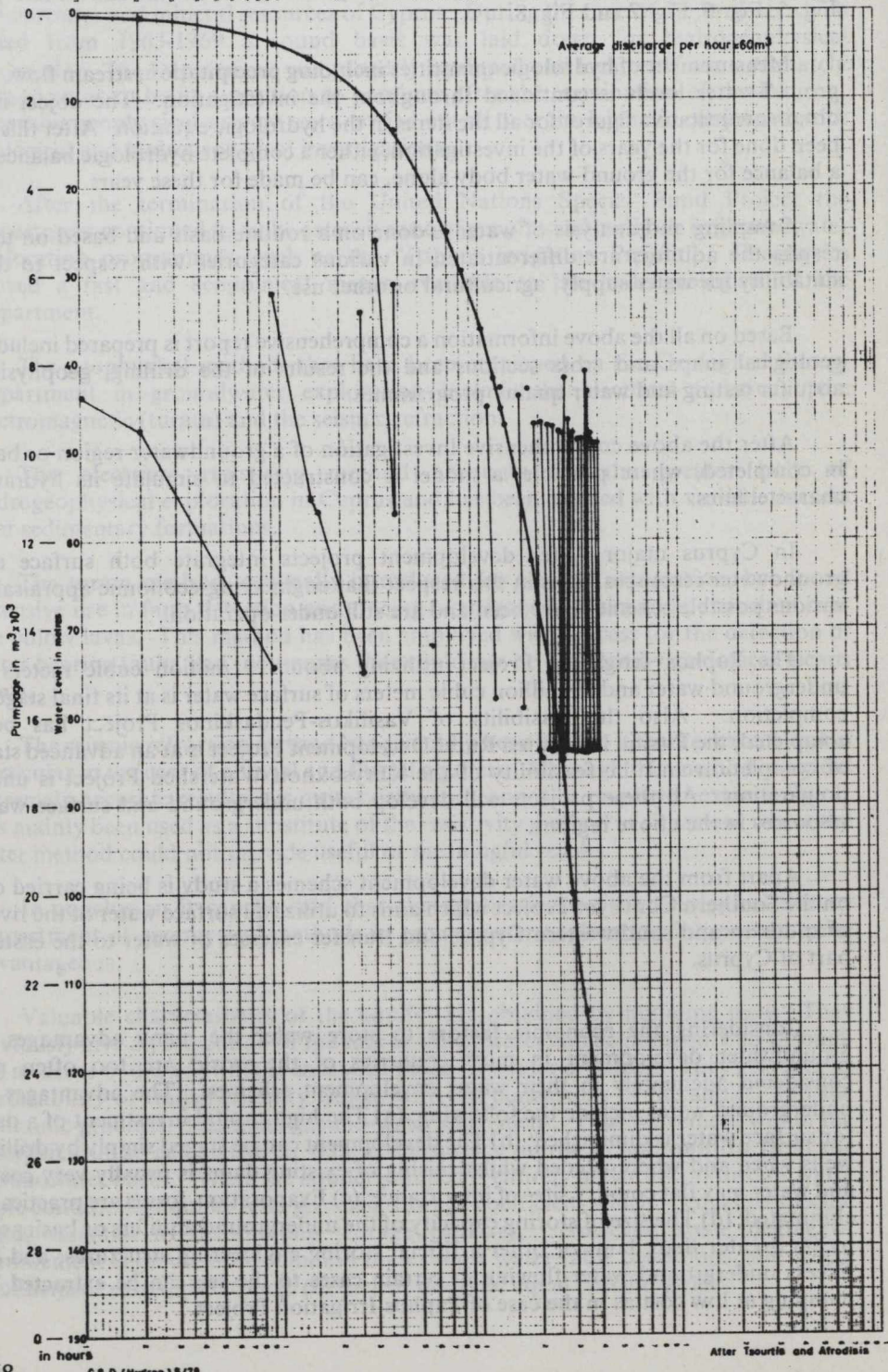
The Paphos Irrigation Project utilizing about 10 million cubic meters of underground water and 50 million cubic meters of surface water is at its final stage of completion. Also the feasibility of Vasilikos-Pendaskinos Project has been completed, the Pitsilia Integrated Rural Development Project is at an advanced stage of completion and the feasibility of the Khrysokhou Watershed Project is under preparation. All these projects will develop both underground and surface water resources in the above regions.

Apart from the above water development schemes a study is being carried out on the Southern Conveyor Project which aims to utilize all surface water of the rivers of southern and southwestern Cyprus and transfer excesses of water to the eastern part of Cyprus.

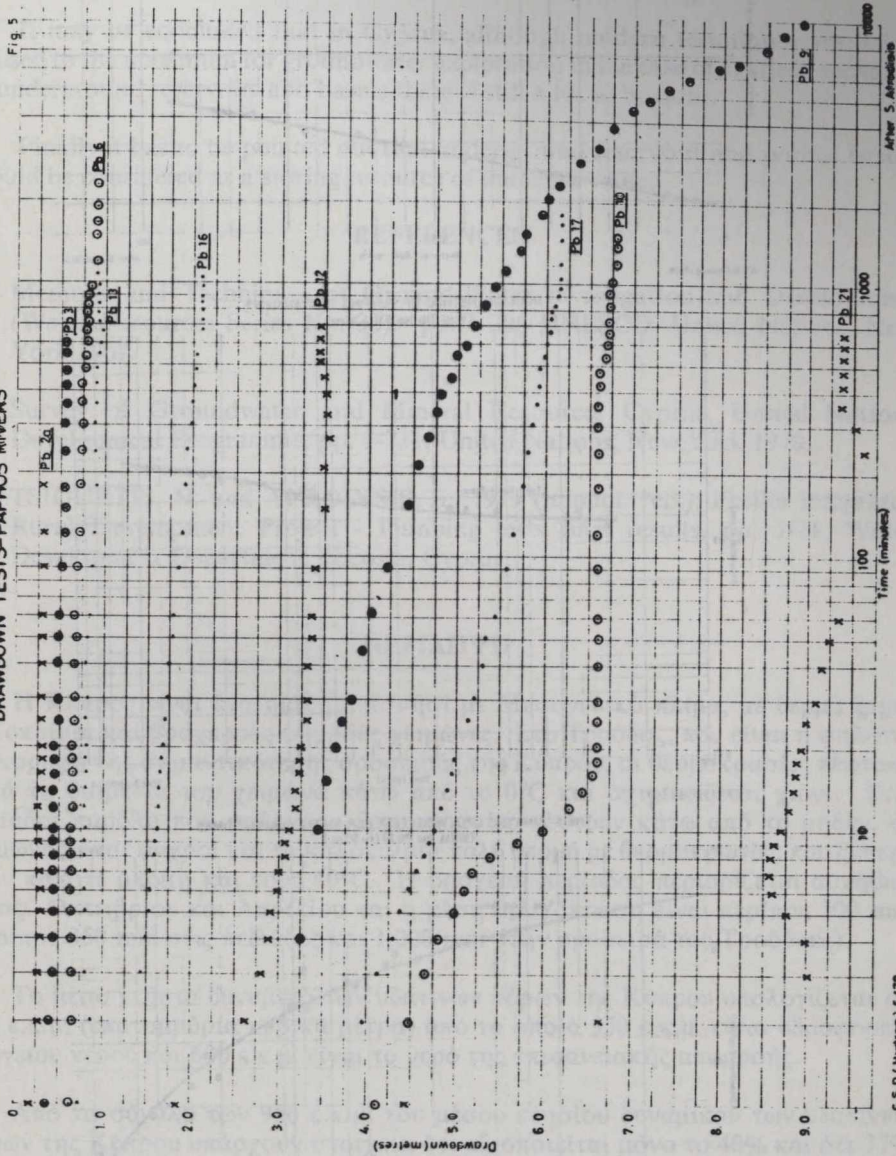
Considering the economic factors to store water the many advantages of groundwater development in most countries of the world are too often not considered adequately in their water development schemes. The advantages of underground water include the following: (a) The high capital investment of a dam for surface water is diminished; (b) The development can be staged simply by drilling wells when and where needed whilst raising of existing dams is usually very costly and water may flat country sites of importance; (c) Evaporation losses are practically eliminated; (d) The size of storing capacity of the underground aquifers or basins are by far greater than dams or other artificial storing engineering structures; and (e) Excess underground water flowing in certain cases to the sea can be extracted by pumping at low cost as in the case of Paphos Irrigation Project.

POTAMITISSA B.H No 67/76
TEST PUMPING 1979

Fig. 4

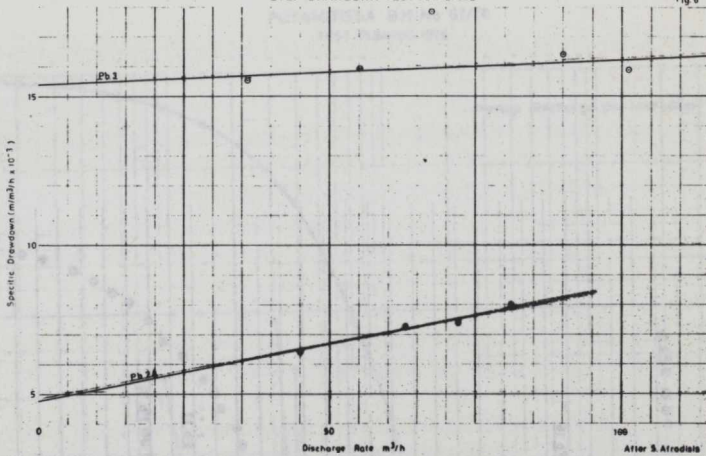


DRAWDOWN TESTS-PAPHOS RIVERS



STEP-DRAWDOWN TEST ANALYSIS

Fig 6

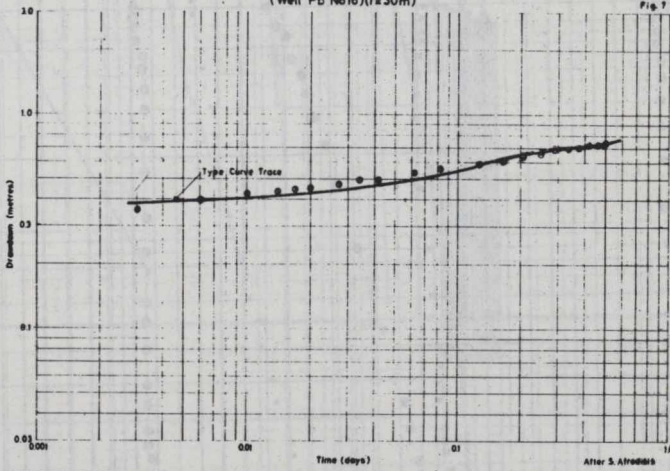


G.S.D. (Hydrog) 7/79

After S. Afredisis

BOULTON METHOD OF PUMPING TEST ANALYSIS
(Well Pb No16)(r=30m)

Fig 7

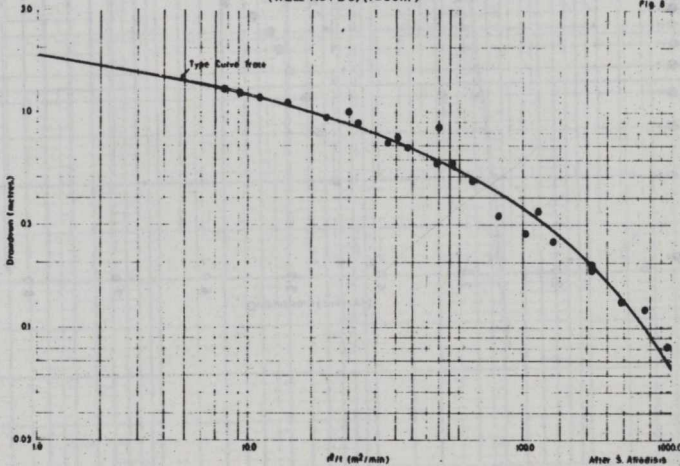


G.S.D. (Hydrog) 9/79

After S. Afredisis

THIS ANALYSIS OF A WELL TEST FOR SHORT PUMPING TIMES
(WELL No Pb 9)(r=30m)

Fig 8



G.S.D. (Hydrog) 8/79

After S. Afredisis

As in most Cyprus aquifers or basins extracted groundwater exceeds the safe yields of the groundwater basins, artificial recharge has to be applied to replenish the groundwater body. The economics of artificial recharge are particularly favourable in many aquifers in Cyprus due to the climate conditions which include a wet season with surplus runoffs followed by dry seasons, and favourable geologic conditions.

It may be concluded that in Cyprus, although modern techniques are being utilised to the maximum for groundwater exploration in the case of artificial recharge of underground reservoirs and basins there is still a lot to be done.

Finally it has to be pointed out that underground reservoirs and porous basins should be considered as a storing resource of immense value.

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ΠΕΡΙΛΗΨΗ

Η Κύπρος είναι ένα ημιξηρικό νησί με Μεσογειακό κλίμα, με θερμά ξηρά καλοκαίρια και βροχερούς ψυχρούς χειμώνες. Στο Τροόδος, που είναι η ψηλότερη κορυφή της σημαντικότερης οροσειράς της Κύπρου, οι θερμοκρασίες πέφτουν κατά τη διάρκεια του χειμώνα κάτω από το 0°C και σχηματίζεται χιόνι. Στις πεδιάδες παρόλο που σπάνια οι θερμοκρασίες πέφτουν κάτω από το μηδέν, οι χειμώνες είναι ψυχροί και τα καλοκαίρια πολύ θερμά με θερμοκρασίες που ξεπερνούν κάποτε ακόμη και τους 40°C. Η βροχερή περίοδος περιορίζεται συνήθως μεταξύ Οκτωβρίου και Απριλίου και η μέση βροχόπτωση είναι περίπου 500 mm (περίπου 350 mm στις πεδιάδες και 1,000 mm στην οροσειρά του Τροόδους).

Το μέσο ετήσιο δυναμικό των υδάτινων πόρων της Κύπρου υπολογίζεται σε 950 ε.κ.μ. (εκατομμύρια κυβικά μέτρα) από τα οποία 350 ε.κ.μ. είναι υδροφορείς υπόγειου νερού και 600 ε.κ.μ. είναι το νερό της επιφανειακής απορροής.

Από το σύνολο των 950 ε.κ.μ. του μέσου ετησίου δυναμικού των υδατινών πόρων της Κύπρου υπάρχουν στοιχεία ότι αξιοποιείται μόνο το 40% και ότι 77% του αξιοποιούμενου ετήσιου δυναμικού λήφθηκε από υπόγειους υδάτινους υδροφορείς, ενώ μόνο 23% παίρνονται απ' ευθείας από την υδάτινη επιφανειακή απορροή. Τα στατιστικά αυτά στοιχεία δείχνουν τα μεγάλα περιθώρια που υφίστανται

για αξιοποίηση κυρίως της επιφανειακής υδρορροής του δυναμικού των υδάτινων πόρων της Κύπρου.

Η αξιοποίηση της επιφανειακής υδρορροής του δυναμικού των υδάτινων πόρων της Κύπρου επιβάλλει την κατασκευή νέων υδατοφρακτών.

Οι υπόγειοι υδροφορείς μπορούν να χωριστούν σε τρεις μεγάλες κατηγορίες (α) τους υδροφορείς των αλλουβιακών αποθέσεων άμμων και κροκαλών, (β) τους καρστικούς υδροφορείς που βρίσκονται μέσα σε ασβεστολίθους, δολομίτες και γύψους και (γ) τους υδροφορείς των ημιπορωδών ιζηματογενών πετρωμάτων.

Η έρευνα για ανακάλυψη νέων υδροφορέων γίνεται με την εφαρμογή συνδυασμένων γεωφυσικών, γεωλογικών και υδρογεωλογικών μεθόδων. Εντούτοις πιστεύεται ότι υπάρχουν μεγάλα περιθώρια αύξησης του υπόγειου δυναμικού των υδατινών πόρων της Κύπρου με βελτιωμένα συστήματα τεχνητού εμπλουτισμού και τονίζεται η τεράστια οικονομική σημασία που έχουν γενικά οι φυσικές υπόγειες λεκάνες που αποτελούνται από πορώδη πετρώματα.

ABSTRACT

Cyprus is a semi-arid island with a Mediterranean climate of hot dry summers and cool wet winters. In the mountains temperatures in the winter fall below zero. In the plains although the temperatures do not normally fall below zero the winters are cool and temperatures during summers may exceed 40°C. The rainfall is confined to the months from October to April, averages 500 mm per year varying from 350 mm in the Mesaoria to 1,000 mm to Troodos.

The computed average annual potential water resource of Cyprus is about 950 MCM (million cubic metres) of which 600 MCM is surface run off and about 350 MCM is groundwater.

Out of the potential water resource only 40% is being utilised. About 77% of this utilised water is obtained from groundwater and only 23% is obtained from the surface run off. These statistical records indicate that a large bulk of the run off resource is still unutilised and its maximum utilization is considered pertinent by building new dams.

The underground aquifers may be distinguished into three categories, namely (a) groundwater bodies occurring in unconsolidated alluvial sand and gravel (b) groundwater bodies occurring in karstic limestones, dolomites and gypsum and (c) aquifers found in semi-porous sedimentary rocks.

Modern techniques are being utilised to the maximum for groundwater exploration. However, there is still a lot to be done in connection with the artificial recharge of underground water reservoirs.

ΓΕΩΓΡΑΦΙΚΑ ΝΕΑ - ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ ΤΟΥ ΓΟΚ

ΓΕΝΙΚΗ ΣΥΝΕΛΕΥΣΗ ΤΩΝ ΜΕΛΩΝ ΤΟΥ ΓΟΚ ΚΑΙ Η ΛΟΓΟΔΟΣΙΑ ΤΟΥ ΠΡΩΗΝ ΠΡΟΕΔΡΟΥ κ. ΠΑΝΑΓΙΩΤΗ ΑΡΓΥΡΙΔΗ

Πραγματοποιήθηκε στις 31 Οκτωβρίου, 1984 Γενική Συνέλευση των μελών του Γεωγραφικού Ομίλου Κύπρου. Στις αρχαιρεσίες που έγιναν εκλέγηκε νέο Διοικητικό συμβούλιο το οποίο σε συνεδρία του στις 14 Νοεμβρίου, 1984 καταρτίστηκε σε σώμα ως ακολούθως:

Νίκος Ρωσσίδης - Πρόεδρος, Γιώργος Καδής - Αντιπρόεδρος Α', Φροσούλα Χριστοφίδου - Αντιπρόεδρος Β', Ανδρέας Οδ. Χριστοδούλου - Γενικός Γραμματέας, Κρίτων Γεωργίου - Βοηθός Γενικός Γραμματέας, Γιαννάκης Κουμίδης - Ταμίας, Μιχαλάκης Θεοδώρου - Εισπράκτορας, Ανδρέας Σοφοκλέους - Έφορος Δημοσίων Σχέσεων, Ανδρέας Χρίστου - Έφορος Βιβλιοθήκης, Χαρτοθήκης, Παναγιώτης Αργυρίδης - Έφορος Ταξιδίων και Μελετών, Παύλος Πιπερίδης - Έφορος Κοινωνικών Εκδηλώσεων.

Η λογοδοσία του πρώην προέδρου έχει ως ακολούθως:

Αγαπητοί φίλοι,

Έχει συμπληρωθεί η διετής θητεία του παρόντος Διοικητικού Συμβουλίου του Γεωγραφικού Ομίλου, και ταυτόχρονα ο Όμιλος έχει κλείσει δεκαέξι χρόνια ζωής. Σήμερα θα ανασκοπήσουμε το έργο που έχει επιτελεσθεί στα δυο χρόνια που πέρασαν, θα ασκήσουμε αυτοκριτική και θα χαράξουμε τη μελλοντική πορεία μας.

Στη διετία που πέρασε ο Γεωγραφικός Όμιλος συνέχισε τη δραστηριότητά του σε διάφορους τομείς. Πρέπει, όμως, να ομολογήσουμε ότι δεν είμαστε απόλυτα ικανοποιημένοι από τη δραστηριότητα που έχουμε αναπτύξει. Οπωσδήποτε μπορούσαν να γίνουν περισσότερα. Όμως αντικειμενικοί λόγοι και άλλες δυσκολίες μάς ανάγκασαν να περιορίσουμε τις δραστηριότητές μας. Η αναχώρηση στο εξωτερικό δυο μελών του Διοικητικού Συμβουλίου, η αποχώρηση τρίτου, οι επαγγελματικές και άλλες υποχρεώσεις μελών του Συμβουλίου, και η από μέρους ορισμένων μελών μη τακτική προσέλευση στις συνεδρίες και η μη ανάληψη των ευθυνών και καθηκόντων τους, ήταν οι βασικοί λόγοι που ο Όμιλος δεν παρουσίασε τη δραστηριότητα που αναμέναμε.

Ωστόσο, παρά τις δυσκολίες αυτές και σε σύγκριση με άλλες επιστημονικές και πνευματικές οργανώσεις του τόπου, το έργο του Γεωγραφικού Ομίλου μπορεί να χαρακτηριστεί αξιόλογο.

Μετά την ανάληψη των καθηκόντων του, το Μάρτη του 1983, το Διοικητικό Συμβούλιο οργάνωσε ειδική τελετή στο Παγκύπριο Γυμνάσιο, που στη διάρκειά της επιδόθηκαν τα βραβεία του Δ' Παγκύπριου Μαθητικού Διαγωνισμού στη

Γεωγραφία της Κύπρου, καθώς και το επαμειβόμενο έπαθλο του ΓΟΚ στο Γυμνασίαρχη του Παγκυπρίου Γυμνασίου.

Με αφορμή την τελετή αυτή ο Πρόεδρος του Ομίλου έδωσε το Μάϊο του 1983 συνέντευξη στο ΡΙΚ, τόσο σχετικά με το Μαθητικό Διαγωνισμό, όσο και για τις δραστηριότητες και το έργο που επιτελεί γενικά ο Όμιλος.

Στον τομέα της προστασίας του περιβάλλοντος ο Όμιλος εξέδωσε ανακοινώσεις με την ευκαιρία της Παγκόσμιας Ημέρας Περιβάλλοντος, συνέχισε τη συμμετοχή του στις συνεδρίες και δραστηριότητες της Μικτής Επιτροπής Περιβάλλοντος με εκπρόσωπό του τον κ. Σοφοκλέους, και αναμίχθηκε ενεργά στο θέμα του αποχετευτικού συστήματος Λεμεσού, με στόχο την προστασία της Αλυκής Λεμεσού από τυχόν επέμβαση σ' αυτήν κατά τη σχεδίαση του όλου έργου.

Συνεχίστηκε η επικοινωνία με το Υπουργείο Παιδείας και οι προσπάθειες για βελτίωση της διδασκαλίας του μαθήματος της Γεωγραφίας στα σχολεία μας. Επίσης ο Πρόεδρος του Ομίλου και ο κ. Σοφοκλέους συμμετέσχαν σε επιτροπή που όρισε το Υπουργείο Παιδείας για επιλογή σχολικού άτλαντα ύστερα από προκήρυξη σχετικού διαγωνισμού.

Εκδόθηκε και κυκλοφόρησε το δελτίο του Ομίλου «Γεωγραφικά Χρονικά» αρ. 22, που καλύπτει την περίοδο Ιουλίου 1982 - Δεκεμβρίου 1983. Επίσης διανεμήθηκε το δελτίο αρ. 20-21 που είχε εκδοθεί προηγουμένως. Εδώ πρέπει να τονισθεί ότι η έκδοση των Γεωγραφικών Χρονικών αποτελεί σημαντική και ουσιαστική συμβολή του Ομίλου στην προαγωγή και καλλιέργεια της επιστήμης της Γεωγραφίας. Παράλληλα καθιστά τον Όμιλο διεθνώς γνωστό και αξίζει να σημειωθεί ότι έχουν αυξηθεί σημαντικά οι οργανισμοί, πανεπιστήμια, βιβλιοθήκες και άτομα στο εξωτερικό που επιδεικνύουν ενδιαφέρον για τα Γεωγραφικά χρονικά. Παρά τις οικονομικές και άλλες δυσκολίες που αντιμετωπίζει ο Όμιλος πιστεύω πως πρέπει να καταβληθεί προσπάθεια ώστε το Δελτίο του Ομίλου να εκδίδεται ανελλιπώς πάνω σε ετήσια βάση.

Παράλληλα έχουν διευρυνθεί και οι σχέσεις του Ομίλου με διεθνείς οργανισμούς, γεγονός που αντανακλάται στον αυξημένο όγκο της αλληλογραφίας. Στον τομέα αυτό, δηλαδή στη διεύρυνση και ενίσχυση των διεθνών σχέσεων του Ομίλου κατεβλήθη ιδιαίτερη προσπάθεια.

Η διετία που πέρασε ίσως να είναι η μόνη στην ιστορία του Ομίλου, που χαρακτηρίζεται από σχετικά μεγάλη συμμετοχή μας σε διεθνή συνέδρια. Η αξιολογή αυτή δραστηριότητα άρχισε με τη συμμετοχή του κ. Σοφοκλέους στη Διεθνή Συνάντηση για την περιφεριακή ανάπτυξη στην Μεσόγειο, που πραγματοποιήθηκε στους Δελφούς το Σεπτέμβρη του 1983. Ακολούθησε η συμμετοχή μας σε δυο άλλα συνέδρια που οργάνωσε το Friedrich Ebert Foundation της ο Δ. Γερμανίας: το ένα στην Τύνιδα με θέμα τις εκπτώσεις στη Γεωργία των Μεσογειακών χωρών μετά τη διεύρυνση της ΕΟΚ προς τα Νότια, στο οποίο τον Όμιλο εκπροσώπησε ο κ. Κ. Αποστολίδης. Το δεύτερο έγινε στο Αμμάν με θέμα τον εκμοντερνισμό της Γεωργίας και τις οικονομικές και κοινωνικές επιπτώσεις. Στο συνέδριο αυτό εκπροσώπησε τον Όμιλο η κα Φρ. Χριστοφίδου.

Τέταρτη συμμετοχή μας σε διεθνές συνέδριο, σ' εκείνο που διαργάνωσε η Διεθνής Γεωγραφική Ένωση (I.G.U.) στο Παρίσι, τον περασμένο Αύγουστο, στο οποίο θα συμμετείχε ο κ. Σοφοκλέους, δυστυχώς δεν πραγματοποιήθηκε για λόγους πέραν των δυνάμεών μας, ένεκα απρόοπτου προβλήματος που παρουσιάστηκε την τελευταία πραγματικά στιγμή. Είναι πράγματι ατυχές το γεγονός ότι από όχι δική μας υπαιτιότητα δεν κατέστη δυνατό να προβληθεί ο Όμιλος και η Κύπρος γενικά, στη μεγάλη αυτή διεθνή διοργάνωση, εφόσον μάλιστα είχαμε αρχίσει όλες τις σχετικές διαδικασίες και κάναμε όλες τις προετοιμασίες ένα και πλέον χρόνο πριν την πραγματοποίησή του Συνεδρίου.

Ωστόσο, συμμετέσχαμε στη Διεθνή Επιστημονική Χαρτογραφική Έκθεση, που διοργανώθηκε παράλληλα με το συνέδριο της I.G.U., με την αποστολή πέντε βιβλίων και τεσσάρων χάρτων. Με τον τρόπο αυτό προβλήθηκε πιστεύουμε, τόσο ο Όμιλος όσο και η Κύπρος.

Καταλήγοντας θα ήθελα να ευχαριστήσω τα μέλη του Συμβουλίου που εργάστηκαν και συνεργάστηκαν για την προώθηση των σκοπών του Ομίλου και ιδιαίτερα εκείνους που επάξια εκπροσώπησαν τον Όμιλο στο εξωτερικό.

Εύχομαι στο Νέο Διοικητικό Συμβούλιο που θα εκλεγεί κάθε επιτυχία στο έργο του. Ξέρουμε ότι είναι πολλά εκείνα που πρέπει να γίνουν, και ότι πολλά είναι και τα προβλήματα που υπάρχουν. Όμως ο Γεωγραφικός Όμιλος Κύπρου πρέπει όχι μόνο να διατηρηθεί, αλλά και να ενδυναμωθεί και ενισχυθεί στο μεγαλύτερο δυνατό βαθμό.

ΣΥΜΜΕΤΟΧΗ ΤΟΥ ΓΟΚ ΣΕ ΔΙΕΘΝΗ ΣΥΝΕΔΡΙΑ

Διεθνές Συνέδριο στο Αμμάν Ιορδανίας

Το Mediterranean Research Cooperation Project (MERCOOP) - Σχέδιο Έρευνας και Συνεργασίας στη Μεσόγειο - σε συνεργασία με τη Γεωργική Σχολή του Πανεπιστημίου της Ιορδανίας (Faculty of Agriculture University of Jordan) οργάνωσε μεταξύ 19-22 Μαΐου, 1984 διεθνές συνέδριο στο Αμμάν, πρωτεύουσα της Ιορδανίας.

Θέμα του Συνεδρίου ήταν "Some Aspects of Agricultural Modernisation and their Economic and Social Impacts".

Στο Συνέδριο έλαβαν μέρος 19 περίπου Καθηγητές/ειδικοί Πανεπιστημίων ακαδημαϊκών άλλων οργανισμών από το Μαρόκκο, την Αλγερία, την Τηνυσία, την Αίγυπτο, την Τουρκία, την Ο.Δ. Γερμανίας, την Ιορδανία και την Κύπρο.

Το Συνέδριο ασχολήθηκε κυρίως με τα προβλήματα, τις λύσεις και τα προς λύση προβλήματα των πιο κάτω θεμάτων.

— Γεωργική παραγωγή υπέρ της ασφάλειας τροφίμων, της εξαγωγής τροφίμων ή των βιομηχανικών προϊόντων.

— Προϋποθέσεις και πειθανές επιπτώσεις της μηχανοποίησης της γεωργίας.

— Προϋποθέσεις και πειθανές αρνητικές και θετικές επιπτώσεις της άρδευσης.

— Πώς να βελτιωθούν οι συνθήκες διαβίωσης για παραμονή του αναγκαιού ανθρώπινου δυναμικού στις αγροτικές περιοχές και για αποφυγή της ανεξέλεγκτης μετανάστευσης στις αστικές περιοχές.

Η Κύπρος εκπροσωπήθηκε στο Συνέδριο από την κα Φροσούλα Χριστοφίδου, γεωγράφο και μέλος του Διοικητικού Συμβουλίου του Γ.Ο.Κ., που παρουσίασε εισήγηση με θέμα: "Land Consolidation in Cyprus as framework for general agricultural modernization and its social and economic impacts".

Η εισήγηση της κας Χριστοφίδου δημοσιεύεται σ' άλλες σελίδες του τεύχους αυτού.



Ο διοργανωτής του σεμιναρίου κ. Schöll (δεύτερος από δεξιά) και μερικοί από τους συνέδρους στη Νεκρά Θάλασσα κατά τη διάρκεια εκπαιδευτικής εκδρομής στην Κοιλιάδα του Ιορδάνη.

ΝΕΕΣ ΕΚΔΟΣΕΙΣ

ΤΑΞΙΔΙΑ ΣΤΗΝ ΚΥΠΡΟ 4

Μέσα στο 1984 δόθηκε στον κύπριο αναγνώστη ο 4ος τόμος του βιβλίου «Ταξίδια στην Κύπρο 4» του Γιώργου και Μάχης Καρούζη.

Από την αρχή μέσα από τα σύντομα κείμενα, που ένας διαβάζει εύκολα, αναβλύζει η αγάπη για την κυπριακή φύση, το κυπριακό τοπίο, το κυπριακό χωριό. Πραγματοποιείται μ' επιτυχία ένα προσκύνημα στον τόπο μας. Το μόνο που χρειάζεται είναι ένα ελαφρό λοξοδρόμημα από τους πολυσύχναστους υπεραστικούς δρόμους.

Η επίσκεψη σε χωριά, τοπία και παραθαλάσσια μέρη του νησιού επιχειρεί μίαν αποτύπωση μέσα στο χρόνο και μέσα στο χώρο της ανθρώπινης μαρτυρίας μέσα από ένα φακό ιστορικό, θρησκευτικό ή άλλως πως πολιτιστικό. Συνδιάζεται γόνιμα με την αρμονική ένταξη στο μικρό κυπριακό γεωγραφικό χώρο τόσο των ανθρώπων που έδρασαν στο παρελθόν και της τοπικής παράδοσης όσο και των σημερινών ασχολιών τους.

Με το πλήθος των πληροφοριών που δίνονται στήνεται ολόκληρο σκηνικό για το χώρο που ξανοίγεται κάθε φορά μπροστά μας ζωντανός και ελκυστικός και που γίνεται οικείος πριν καν τον πλησιάσουμε. Τα «Ταξίδια στην Κύπρο 4» δίνουν έτσι μια ώθηση για εσωτερικό τουρισμό, για γνωριμία και ανθρώπινη επαφή, για μια πορεία του Κύπριου προς το τοπικό, το φυσικό.

Τέλος, μέσα από τη σειρά των τόμων αυτών οι συγγραφείς καλλιεργούν την πατριδογνωσία δηλ. τη γνωριμία του κύπριου πολίτη, ιδιαίτερα του νεαρού Κυπρίου, με όλα εκείνα τα στοιχεία που συνθέτουν την κυπριακή πατρίδα σαν τόπου καταγωγής, διαμονής και δημιουργίας: αρχαία και νεώτερη κληρονομιά, πόλεις και χωριά, φύση, ανθρώπινα έργα.

NEW PUBLICATIONS

THE PROCESS OF INDUSTRIALIZATION IN CYPRUS

Publishers: Social Research Centre, Nicosia, Cyprus

Author: DR. E.I. DEMETRIADES, Ph.D. (LONDON)
Director,
Department of Statistics and Research, Ministry of
Finance, Nicosia-CYPRUS.

Date: DECEMBER, 1984.

This study examines in detail the process of industrial development in Cyprus since Independence in 1960. It concentrates in particular on the period of planned industrialization in Cyprus and during the first two Five-Year Plans 1962-1966 and 1967-1971. Where data permitted, the analysis was extended to the period prior to

1962 when there was much less government planning. A comprehensive set of statistical tables for the period 1955-1981 provide comparable data on a time series basis on some of the main aspects of the Cyprus economy. These facilitate a better understanding and evaluation of industrial and economic developments in the country.

The book consists of three parts. Part I establishes the general background to industrial development in Cyprus. It reviews the geographical, historical and economic structure of the country; the industrialization strategy pursued; the basic structural features of the manufacturing sector and the characteristics of the factors of production employed in manufacturing.

Part II describes and evaluates the principal policies adopted by the Government in promoting industrial growth. Special emphasis is given to the system of protection since this has been the most important policy instrument affecting industrialization in Cyprus. An analysis is undertaken of the tariff-making machinery and the measurement of nominal and effective rates of protection. Also examines the institutional policy followed especially with regard to the establishment of the Cyprus Development Bank, the Cyprus Productivity Centre and the Industrial Estates.

Part III examines the extent of the attainment of the development objectives of the industrialization policies pursued. In particular, it investigates the consequences of industrialization on employment, foreign trade, the balance of payments, the growth of the manufacturing sector and the restructuring of the economy. These topics are examined through production functions, import-substitution models and other empirical investigations. Each hypothesis tested is discussed in detail, including the models employed and the estimation procedures used.

In general, the book provides a comprehensive account of the industrial and economic development of Cyprus during the last two decades. The accompanying extensive Bibliography and set of 50 statistical tables are a most valuable contribution to the study of the Cyprus economy.

The book is of interest to economists, econometricians, statisticians, quantitative researchers, planners, policy analysts and others concerned with industrial development and programs evaluation.

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Cyprus Telecommunications Authority occupies an enviable position among the countries with the biggest number of ISD countries connected onto their telephone system. At present eighty five (85) countries are connected on the Authority's ISD service and more than 95% of the world's telephones can be reached from Cyprus automatically.

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The Authority keeps abreast with technical progress so that it can give to the general public a modern and efficient service.

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