PROPOSAL – GO 4 GREEN CROWDHACKATHON

Proposal's Name:

EVA@HRA & Dimitra@HRA & SmArt for ALL

(Εφαρμογές Βιώσιμης Ανάπτυξης για ΟΛΟΥΣ - Sustainable development Applications for ALL)

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Εφαρμογές Βιώσιμης Ανάπτυξης για ΟΛΟΥΣ - Sustainable development Applications for ALL

A. Όνομα Πρότασης

EVA@HRA & Dimitra@HRA & SmArt for ALL

B. Κατηγορία

Πρόληψη, Αποκατάσταση

C. Ομάδα που Υποβάλλει την Πρόταση

Ονοματεπώνυμο: Σοφία Κάππου (Leader στο Dimitra@HRA, στο EVA@HRA και στο SmArt for ALL)
Ειδικότητα: Πολιτικός Μηχανικός, Μηχανικός Περιβάλλοντος
Εργασιακή Εμπειρία: Environmental Manager/ Project HSQE Manager / Project Sustainability Manager/ Tenders Coordinator

Ονοματεπώνυμο: Εμμανουέλα Αλευροφά (Co-Leader στο Dimitra@HRA)
Ειδικότητα: Νομικός σύμβουλος (πνευματική ιδιοκτησία)
Εργασιακή Εμπειρία: Web project manager / graphic designer / ιδιοκτήτης επιχείρησης/ Ερευνητής της ΕΕ /

Ονοματεπώνυμο: Θεόδωρος Δημητριάδης (Dimitra@HRA)
Ιδιότητα: Senior Drupal Developer

Ονοματεπώνυμο: Αλέξανδρος Μουντρίχας (Dimitra@HRA)
Ιδιότητα: web developer/3D artist

Ονοματεπώνυμο: Ιάσονας Τζανακάκης (Dimitra@HRA)
Ιδιότητα: Πολιτικός Μηχανικός

Ονοματεπώνυμο: Υβόννη Έλλη Ουζουνίδη (Dimitra@HRA - έχει αποχωρήσει από την ομάδα– δεν συμμετέχει στην πρόταση)
Ιδιότητα: Μηχανολόγος Μηχανικός Αεροναυπηγών Μηχανικών

D. Πρόταση

a) Περιγραφή

Η διαδικτυακή πλατφόρμα έχει τον σκοπό να συμβάλλει στην δημιουργία σχεδιασμού κι εφαρμογής προγραμμάτων με την χρήση βιώσιμων εφαρμογών, συστημάτων αυτοματοποίησης ή/και με συμπλήρωση δεδομένων για όλους. Μέσα σε αυτό το πλαίσιο βιωσιμότητας μπορεί να διαμορφωθεί ένα περιβάλλον πρόληψης, αρωγής, συνεργασίας, βελτίωσης κι ανταπόδοσης με σκοπό την μείωση των ανθρωπογενών κι επιβαρυντικών για το περιβάλλον χρήσεων για την μετρίαση των επιπτώσεων της κλιματικής αλλαγής. Επίσης έχει τον σκοπό να διαμορφωθεί ένα περιβάλλον βιώσιμης αποκατάστασης υφιστάμενων πληγεισών περιοχών από πυρκαγιά, διάβρωση, ρύπανση, λειψυδρία, ξηρασία κ.α. δηλαδή περιοχών που έχουν χαρακτηριστεί ως Υψηλού Κινδύνου σε πιλοτικό πλαίσιο (σχετική υποβαλλόμενη πρόταση Dimitra@HRA).
Η πρόταση αφορά την υποστήριξη της βιώσιμης ανάπτυξης σε υφιστάμενες πόλεις, οικισμούς και γειτονιές και ειδικότερα σε περιοχές που ορίζονται ως Περιοχές Υψηλού Κινδύνου (High Risk Areas).

Στόχος & Σκοπός

1. Στόχος είναι η δημιουργία βιώσιμης ανάπτυξης σε όλες τις περιοχές για όλους τους πολίτες μέσω της εξισορρόπησης τεσσάρων βασικών πυλώνων που είναι το περιβάλλον, η οικονομία, ο πολιτισμός και η τοπική κοινωνία, και

2. Σκοπός είναι η δημιουργία ενός βιώσιμου πλάνου ανάπτυξης μέσω βιώσιμων μελετητικών και κατασκευαστικών έργων και βιώσιμης λειτουργίας κτιρίων, γειτονιών, Δήμων και Πόλεων και βιώσιμης διαβίωσης η οποία θα αφορά όλους τους πολίτες και δεν θα περιορίζεται σε εκείνους που μπορούν να ανταπεξέλθουν οικονομικά.

Η πρόταση μπορεί να συνδυαστεί με τη λειτουργία υφιστάμενων διαδικτυακών προγραμμάτων όπως το Πρόγραμμα «Εξοικονόμηση κατ' οίκον ΙΙ», Πρόγραμμα «LIFE», Στοχευμένα Προγράμματα Κατάρτισης ΚΕΚ ΟΑΕΔ κοκ ή σε μπορεί να δημιουργηθεί μια νέα διαδικτυακή πλατφόρμα με τη συμβολή όλων των συνεργαζόμενων φορέων, στην οποία εκτός της διαδικασίας πιστοποίησης περιγράφεται και το νομοθετικό πλαισίο, το πλαισίο στήριξης και οι νέοι στόχοι προς επίτευξη. Στην πλατφόρμα παρέχονται έξυπνες εφαρμογές η οποίες χρησιμοποιούν πληροφορίες με εισαγωγή δεδομένων ή μετρήσεων σε πραγματικό χρόνο, συνδυάζουν πληροφορίες από βάσεις δεδομένων, υπολογίζουν τα ποσοστά κατανάλωσης, ανακύκλωσης, παραγωγής ρύπων, το ποσοστό απόδοσης και το ποσοστό βελτίωσης ανά κατηγορία και περίπτωση παρέχοντας τη δυνατότητα διαφορετικών συνδυασμών, το κόστος ανά συνδυασμό και τη δυνατότητα υποβολής δεδομένων μέσω αίτησης για την συμμετοχή σε διαφορετικά Έξυπνα Προγράμματα Ανταπόδοσης (πχ SMART Apps).

Το σχέδιο Βιώσιμης Ανάπτυξης για όλους βασίζεται σε μια ολοκληρωμένη διαδικασία και:

1. Ενθάρρυνει την διεπιστημονική ομαδική εργασία για την παροχή περιβαλλοντικής προστασίας και διαχείριση της ποιότητας καθ 'όλη τη διάρκεια κάθε οικοδομοτεχνικού έργου.
2. Επιδιώκει τη βιώσιμη συνεργασία και υποστήριξη φορέων, οργανισμών, εξειδικευμένων επιστημόνων κλπ και τη δημιουργία ενός δικτύου επιστημόνων στην Ελλάδα και στο εξωτερικό, οι οποίοι συνεργάζονται κι αλληλεπιδρούν online για την ανταλλαγή πληροφοριών και δεδομένων σχετικά με βιώσιμα οικοδομικά υλικά, νέες πρακτικές ανακύκλωσης, εναλλακτική διαχείριση αποβλήτων, εναλλακτική διαχείριση υδάτινων πόρων όπως και για ανταλλαγή πληροφοριών σχετικά με βιώσιμες πρακτικές για τη φύτευση και την περιβαλλοντική αποκατάσταση των δασών και του παράκτιου φυσικού περιβάλλοντος σε περιοχές υψηλού κινδύνου.
3. Συνδυάζει διαφορετικά δεδομένα από βάσεις δεδομένων διαφορετικών φορέων κατ'επιλογή κι ανάλογα με το αντικείμενο, στο πλαίσιο της βιώσιμης συνεργασίας (όπως προαναφέρεται στο 2), για την επίτευξη του επιθυμητού στόχου.
4. Περιλαμβάνει μια υπηρεσία που παρέχει βασικές και εξατομικευμένες υπηρεσίες κατ'απαίτηση για τους Δήμους και τις Κοινότητες περιοχών υψηλού κινδύνου με στόχο την αντιμετώπιση συνθηκών υψηλού κινδύνου όπως; πυρκαγιά, πλημμύρες, ξηρασία, διάβρωση εδάφους, ισχυροί άνεμοι, ρύπανση, απομακρυσμένες περιοχές.
5. Συνδυάζεται με την κατάρτιση για την συμμετοχή σε εθελοντικές και τοπικές δράσεις αναδάσωσης, ανακύκλωσης, κατάρτισης όπως και με παραμέτρους πολιτικής προστασίας.
6. Ενισχύει τις ευκαιρίες τοπικής απασχόλησης σε συνεργασία με οργανισμούς κι εθελοντικές οργανώσεις με στόχο την υποστήριξη οικονομικά ευάλωτων ομάδων, μέσω της δημιουργίας τοπικών περιβαλλοντικών κι αναπτυξιακών δράσεων, πάντα σε συνδυασμό με δραστηριότητες πιστοποιημένης εκπαίδευσης και κατάρτισης πολιτών κι εργαζομένων.
7. Ενισχύει την δημιουργία σχολών κατάρτισης σε Δημόσια Πανεπιστήμια, Σχολές κι Οργανισμούς με τη δυνατότητα εισαγωγής σπουδαστών διαφόρων εθνικοτήτων μέσω διαδικτυακών προγραμμάτων πιστοποίησης.
8. Ενισχύει την εισαγωγή προγραμμάτων ενημέρωσης, εκπαίδευσης και συμμετοχής σε εθελοντικά προγράμματα μαθητών της πρωτοβάθμιας και δευτεροβάθμιας εκπαίδευσης.
9. Ενισχύει την εργασία εξ'αποστάσεως (Remote Working) για μεσαίες επιχειρήσεις που ποσοστό της τάξης του 10% κι άνω των εργαζομένων τους μπορεί να εργαστεί κι εκτός γραφείου (πχ οι υπάλληλοι γραφείου που έχουν την ευκαιρία να εργάζονται από απόσταση για το μεγαλύτερο μέρος της εργάσιμης εβδομάδας, αλλά πρέπει να μετακινούνται στο γραφείο μία ή δύο μέρες την εβδομάδα.) Οι εταιρείες με αυτόν τον τρόπο μπορούν να δουν μειωμένα γενικά έξοδα, να είναι συνεπείς στις φορολογικές κι ασφαλιστικές τους υποχρεώσεις και στις πιστοποιήσεις τους, ενώ **παράλληλα μειώνεται η μετακίνηση των εργαζομένων**

και συνεπώς οι ρυπογόνες ουσίες (καύσιμα, απόβλητα) και το κυκλοφοριακό.

10. Υποστηρίζει και διευρύνει τον σκοπό και τη δράση προγραμμάτων υποστήριξης ευάλωτων ομάδων πολιτών όπως ηλικιωμένοι κι ασθενείς στα πλαίσια της βιώσιμης ανάπτυξης για όλους.
11. Συμπεριλαμβάνει υπηρεσίες φύλαξης ανά γειτονιά κι άμεσης ενημέρωσης/απόκρισης για την ασφάλεια των πολιτών.

Ο διαδικτυακός τόπος:

1. Παρέχει εργαλεία, βοήθεια και διαθέσιμες πληροφορίες σε εκείνους που τον χρησιμοποιούν.
2. Συνδυάζεται με διαδικτυακούς τόπους άλλους φορέων όπως το ΕΣΥΔ, το Building Cert, το ΤΕΕ, το Βιομηχανικό Επημελητήριο κ.α. κι επιτρέπει στους επισκέπτες να επιλέξουν πιστοποιημένους ειδικούς κι εταιρείες προκειμένου να ανταποκριθούν στο συγκεκριμένο αίτημά τους για μια προσαρμοσμένη λύση - για μια δεδομένη κατάσταση (υπηρεσία κατόπιν ζήτησης).
3. Παρέχει πληροφορίες βιώσιμων οικοδομικών υλικών και προδιαγραφές σε συνεργασία με εργαστήρια, προγράμματα και φορείς πιστοποίησης (Δημόκριτος, Γενικό Χημείο του Κράτους, READ, BASF, ISO, LEED, BRE, ESTIDAMA κοκ).
4. Περιέχει έξυπνες εφαρμογές σε πραγματικό χρόνο ή onsite εφαρμογές με εισαγωγή δεδομένων για την εκτίμηση του θετικού αποτελέσματος έκαστης βιώσιμης δράσης (δηλαδή τη μείωση των απορριμάτων, την ανακύκλωση, τη μείωση αέριων ρύπων, τη μείωση κατανάλωσης του νερού κοκ) ανά περίπτωση.
5. Περιλαμβάνει προγράμματα επιβράβευσης- αρωγής- ανταπόδοσης ανά αποτέλεσμα σύμφωνα με το ποσοστό επίτευξης στόχου ανά γειτονιά ή Δήμο.
6. Συμπεριλαμβάνει σε έκαστο προγραμμα παραδείγματα που επιτρέπουν στους χρήστες του προαναφερόμενου ιστότοπου να κατανοήσουν την διαδικασία λειτουργίας των προγραμμάτων και των εφαρμογών αλλά και την ουσιαστική συμβολή του συγκεκριμένου πλαισίου αμφίδρομης ανταπόδοσης αλλά κι αρωγής για τις ευάλωτες ομάδες πληθυσμού.

Συσκευές που μπορούν να συνδεθούν:

a. PCs, Laptops, Tablets, Cell phones, GPS

Inputs:

a. Data bases
b. Real time Apps (ie google maps, gps)
c. GPS
d. KNX (Smart energy systems)
e. POS
f. QR Reader, Barcode Reader
g. Smart Irrigation systems
h. Sensors

b) Βασικοί Πυλώνες

Οι Βασικοί Πυλώνες Αρωγής - Ανταπόδοσης είναι οι εξής:

1. Προγράμματα Ανταπόδοσης/Ανταμοιβής
2. Προγράμματα Αρωγής/Εθελοντισμού
3. Προγράμματα Κατάρτισης/Πιστοποίησης/Εργασίας
4. Προγράμματα υποστήριξης Ευάλωτων Ομάδων
5. Καινοτομική πρακτική

c) Επιστημονικά Δεδομένα – Βάσεις Δεδομένων

Περιβαλλοντική και Βιώσιμη Διαχείριση HRA – Κατηγοριοποίηση ανά περιοχή

Εφαρμογές Βιώσιμης Ανάπτυξης για ΟΛΟΥΣ - Sustainable development Applications for ALL

1. Συλλογή ή χρήση υφιστάμενων δεδομένων που αφορούν Τοπικές Κλιματολογικές Συνθήκες και Τοπικούς Περιβαλλοντικούς δείκτες (Υγρασία, Θερμοκρασία, Αέρας, Βροχόπτωση, Σύνθεση Εδάφους, Asbestos, VOCs, CO_2,NOx, SOx, CH4 κοκ)
2. Χρήση Γεωμορφολογικών Δεδομένων όπως Αστικοί Χάρτες, Χάρτες Υποδομών, Πολεοδομικοί Χάρτες, Κτηματολόγιο
3. Χρήση Χάρτες ΓΥΣ, με τη δυνατότητα ανάλυσης της πυκνότητας του δάσους και δημιουργία συγκριτικών μοντέλων με τα σημερινά δεδομένα ανά περιοχή,
4. Εφαρμογή Υφιστάμενων Μοντέλων Προσομοίωσης Μικροκλίματος,
5. Εφαρμογής Υφιστάμενων Μοντέλων Προσομοίωσης Κινδύνου,
6. Χρήση δεδομένων για συνθήκες πριν την εκδήλωση πυρκαγιάς (θερμοκρασία, υγρασία, άνεμος) και στατιστικά δεδομένα ανά περιοχή, χάρτες επικινδυνότητας πυρκαγιάς,
7. Υφιστάμενα δεδομένα πυροπροστασίας, (οδεύσεις, δίκτυα, ζώνες πυροπροστασίας, αποστάσεις και χρόνοι απόκρισης, κέντρα συντονισμού),
8. Υφιστάμενα δεδομένα καταγεγραμένου ευάλωτου πληθυσμού ανά περιοχή,
9. Συνδυασμός δεδομένων αναδάσωσης υπό μορφή προσαρμόσιμων φυτικών ειδών, πυροπροστατευτικών φυτών, μικτών δασικών εκτάσεων και δένδρων, με δυνατότητα διαφορετικών δυνητικών συνδυασμών ειδών με διαφορετικές στρατηγικές επιβίωσης και συμβολής ανά περιοχή, ανθεκτικών ή/και με δυνατότητα αναβίωσης μετά από πυρκαγιά,
10. Πιστοποιημένες πληροφορίες για τα δομικά υλικά εντός κι εκτός χώρας (BASF, LEED, ISO, FCS, READ κ.λπ.) όπως καταγράφονται και σε εθνικό επίπεδο (ΕΣΥΔ, Δημόκριτος, Γενικό Χημείο του Κράτους),
11. Πιστοποιημένα ανακυκλώσιμα υλικά (QR Reader, Barcode Reader),
12. Λίστα/δεδομένα πιστοποιημένων προμηθευτών, υπεργολάβων και προμηθευτών (ISO, ΕΣΥΔ κοκ),
13. Δεδομένα αποβλήτων (Ποσότητες ανά Δήμο, Ποσοστά Ανακύκλωσης, Ενεργειακό Αποτύπωμα Μεταφοράς κι Επεξεργασίας, Στόχοι),
14. Πιστοποιημένοι μεταφορείς αποβλήτων,
15. Πιστοποιημένες Εταιρείες Ανακύκλωσης,
16. Πιστοποιημένα ΧΥΤΑ, ΣΔΥΤ,
17. Υφιστάμενα Δεδομένα Διαδρομών Προϊόντων Cradle to Grave, Grave to Cradle, Cradle to Cradle,
18. Δεδομένα κατανάλωσης ρεύματος,
19. Real time KNX: Πιστοποιημένα κι εφαρμόσιμα συστήματα KNX (πχ κεντρική πλατφόρμα εφαρμογής ή τεχνολογία TCP/IP)
20. Δεδομένα κατανάλωσης Καυσίμων – (Real time POS),
21. Συστήματα Real time GPS,
22. Real time Sensors: Μετρήσεις από αισθητήρες εδάφους ή drones ή δορυφορικές λήψεις τοπικής υγρασίας και συνθηκών θερμοκρασίας εδάφους σε πραγματικό χρόνο,
23. Real time Irrigation: Μετρήσεις κατανάλωσης νερού από αρδευτικά συστήματα (sensors, ενδεικτικά αναφέρουμε το Aqua4D's cutting-edge technology).

d) Προγράμματα - Δεδομένων

a. Προγράμματα SmArt

1. Μπορεί να είναι Real Time Apps, ή/και
2. Εγκατεστημένες Συσκευές που λαμβάνουν Real Time Μετρήσεις,
3. Επεξεργαστές δεδομένων από Βάσεις Δεδομένων, ή/και
4. Προετοιμασία συλλογής δεδομένων κι εγγράφων και υποβολή τους μέσω συμμετοχής σε προγράμματα ανταπόδοσης από πιστοποιημένους επαγγελματίες, επιχειρήσεις.

Ενδεικτικά - Προγράμματα ανά κατηγορία

1. Το περιβάλλον μου – (EVA@HRA, Dimitra@HRA)

a. Φύτευση (Είδη, Πυκνότητα, Συντήρηση, Ιδιότητες, βάση δεδομένων Δήμων, ΥΠ Αγροτικής Ανάπτυξης, Γεωπονικού Πανεπιστημίου κοκ Περιγραφή και στοιχεία στο Dimitra@HRA)
b. Κατανάλωση νερού για τη φύτευση (ποσοστό κατανάλωσης, βάση δεδομένων Δήμων και Dimitra@HRA) (Μπορεί να εγκατασταθούν smart irrigation systems, ή sensors)
c. Στατιστικά Δεδομένα ανά περιοχή (Ποσοστό φύτευσης)
d. Χάρτες Επικινδυνότητας - Δείκτες Επικινδυνότητας περιοχής και είδος επικινδυνότητας (Πολιτική προστασία)
e. Απεικόνιση σε χάρτες των βέλτιστων συνθηκών βλάστησης ανά περιοχή (Περιγραφή στο Dimitra@HRA)
f. Μπορεί να λειτουργήσει μεμονομένα ή σε συνδυασμό με το SMART Neighborhood

2. Η γειτονιά μου – (SmArt Neighborhood)
   a. Εισαγωγή Δεδομένων
      i. Πληθυσμιακά δεδομένα, επιχειρήσεις, σχολεία, νοσοκομεία
      ii. Ευάλωτος πληθυσμός ανά περιοχή (Ηλικιωμένοι, Παιδιά, Ασθενείς, Οικονομικά Ασθενείς Ομάδες)
      iii. Ασφάλεια κατοίκων
      iv. Φύτευση (δεδομένα από το το 1)
      v. Ενεργειακό Αποτύπωμα Κατοικιών (δεδομένα από το το 3)
      vi. Καταναλώσεις, Ρύποι, Ενεργειακό Αποτύπωμα Μεταφορών (δεδομένα από το το 4)
      vii. Ανακύκλωση (δεδομένα από το το 5)
      viii. Κατανάλωση νερού (δεδομένα από το 6)
   b. Επιλογή Στόχου Επιθυμητής Απόδοσης Βιωσιμότητας Δήμου, Περιφέρειας
   c. Προτάσεις
      i. Προτάσεις βελτιστοποίησης
         1. Διορθωτικές κινήσεις,
         2. Προτάσεις βελτίωσης,
         3. Εναλλακτικοί Τρόποι Βελτίωσης
      ii. Προτάσεις ΑΠΕ σε Κτίρια
   d. Υπολογισμός
      i. Ποσοστό Πληθυσμού ανά περιοχή
      ii. Ποσοστό Εργαζομένων/Επιχειρήσεων ανά περιοχή
      iii. Ποσοστό Ευάλωτου πληθυσμού ανά περιοχή
      iv. Απόδοση Υφιστάμενης κατάστασης (συνδυασμός δεδομένων)
      v. Ποσοστό Απόδοσης Βιώσιμων Πρακτικών
      vi. Ποσοστό Βελτίωσης Βιώσιμων Πρακτικών

3. Η μετακίνησή μου – (SmArt Transfer)
   a. Εισαγωγή Δεδομένων
      i. Αυτοκίνητα ανά νοικοκυριό (Είδος, Παλαιότητα, Συντήρηση, Ασφάλιση, Κάρτα Καυσαερίων, Καταναλώσεις)
      ii. Αυτοκίνητα ανά επιχείρηση (Είδος, Παλαιότητα, Συντήρηση, Ασφάλιση, Κάρτα Καυσαερίων, Καταναλώσεις)
      iii. Μέσα Μαζικής Μεταφοράς, Δρομολόγια, Συχνότητα Δρομολογίων, Είδος, Παλαιότητα
      iv. Ταξί - GPS
      v. Υφιστάμενη κατανάλωση καυσίμων για μετακίνηση
      vi. Δυσκολίες, καθυστερήσεις (γραμμές ΜΜΜ)
      vii. Ανακυκλώσιμα μέρη (spare parts) (συνδυασμός με SmArt Waste)
   b. Επιλογή Στόχου κι Επιθυμητής Απόδοσης Βιωσιμότητας
   c. Προτάσεις

i. Προτάσεις βελτιστοποίησης της κατανάλωσης
    1. Διορθωτικές κινήσεις,
    2. Προτάσεις βελτίωσης,
    3. Εναλλακτικοί Τρόποι Βελτίωσης
ii. Προτάσεις Βέλτιστης Μετακίνησης
iii. Προτάσεις Εναλλακτικής Μετακίνησης
iv. Προτάσεις Απόσυρσης Αυτοκινήτων
v. Προτάσεις μείωσης της μετακίνησης των εργαζομένων (Remote working, Car sharing, Public Transport)
vi. Προτάσεις εναλλακτικών πρακτικών (ηλεκτρικά αυτοκίνητα και ΜΜΜ, αυτοκίνητα ή ΜΜΜ με καύσιμο υδρογόνου)

d. Υπολογισμός
    i. Ποσοστά Υφιστάμενης Απόδοσης Μετακίνησης
    ii. Ποσοστά Ρύπων
    iii. Ενεργειακό Αποτύπωμα
    iv. Ποσοστό Βελτίωσης ανά περίπτωση
    v. Κόστος Βελτίωσης ανά περίπτωση

4. Το σπίτι μου - App: Έξυπνα Συστήματα Οικιακών Αυτοματισμών (SmArt KNX)
    a. Εισαγωγή Δεδομένων
        i. Αριθμός Οικιακών Συσκευών ανά είδος
        ii. Τύπος Θέρμανσης, Καυστήρας
        iii. Δεδομένα Χρήσης συσκευών, καυστήρα, άλλης θέρμανσης/ψύξης (ώρες/ημέρα/μήνα)
        iv. Είδη υφιστάμενων συσκευών, καυστήρα – τύπος, προδιαγραφή, παλαιότητα (Καταγραφή – Input)
        v. Χιλιοστά συμμετοχής στη θέρμανση (Κοινόχρηστη)
        vi. Συντήρηση συσκευών (Ναι/όχι/συχνότητα)
        vii. Συντήρηση Καυστήρα (Ναι/όχι/συχνότητα)
        viii. Κατανάλωση Ρεύματος, Πετρελαίου, Φ.Α. ανά εποχή (Θερμοκρασία, Υγρασία)
        ix. Αποδεικτικά
    b. Επιλογή Στόχου Επιθυμητής Απόδοσης
    c. Προτάσεις
        i. Προτάσεις βελτιστοποίησης της κατανάλωσης
            1. Διορθωτικές κινήσεις, σύμφωνα με τη βάση δεδομένων υφιστάμενων συσκευών
            2. Προτάσεις βελτίωσης, σύμφωνα με τη βάση δεδομένων πιστοποιημένων/εγκεκριμένων συσκευών
            3. Εναλλακτικοί Τρόποι Βελτίωσης
        ii. Προτάσεις Ανακύκλωσης Συσκευών με ανταπόδοση (συνδυασμός με SmArt Waste)
        iii. Προτάσεις Αναβάθμισης Συσκευών, σύμφωνα με τη βάση δεδομένων πιστοποιημένων/εγκεκριμένων συσκευών
    d. Υπολογισμός
        i. Υπολογισμός ποσοστού κατανάλωσης ανά εποχή
        ii. Υπολογισμός Ενεργειακού Αποτυπώματος
        iii. Ποσοστού Βελτίωσης ανά περίπτωση
        iv. Υπολογισμός Συσκευών ή ανταλλακτικών προς Ανακύκλωση με Ανταπόδοση
        v. Κόστους Βελτίωσης ανά περίπτωση
        vi. Ανταπόδοσης

5. Η ανακύκλωσή μου – App: Έξυπνα Συστήματα Οικιακής Διαχείρισης Απορριμάτων (SmArt City Waste) (Μπορεί να συνδυαστεί και με απόσυρση κι ανακύκλωση συσκευών κι αυτοκινήτων)

a. Εισαγωγή Δεδομένων
    i. Προιόντα ανά νοικοκυριό ή γραφειακή επιχείρηση
    ii. Άτομα ανά νοικοκυριό (αριθμός, ηλικίες)
    iii. Είδος εργασίας, αριθμός ατόμων που απασχολούνται στην γραφειακή επιχείρηση
    iv. Κατηγοριοποίηση και Προδιαγραφές Προιόντων που διατίθενται προς ανακύκλωση
    v. Πιστοποιημένα ανακυκλώσιμα προιόντα που χρησιμοποιούνται ανά νοικοκυριό, επιχείρηση
    vi. Λίστα και Προδιαγραφές Προιόντων που ανακυκλώνονται ή επαναχρησιμοποιούνται
    vii. Διαδρομές προϊόντων (Cradle to Grave, Cradle to Cradle, Grave to Cradle)
    viii. Συνθήκες ρήψης προιόντων στους κάδους ανακύκλωσης
    ix. Ποσοστό προιόντων στους κάδους ανακύκλωσης που ανακυκλώνεται
    x. Συχνότητα Ανακύκλωσης ανά προιόν
    xi. Εταιρείες Ανακύκλωσης ανά προιόν και τοποθεσία
    xii. Δήμοι και Υπηρεσίες ανακύκλωσης ανά Δήμο
    xiii. Ανακύκλωση σε απομακρυσμένες περιοχές, Υπηρεσίες
    xiv. Ελεγχος παρασίτων (Pest Control)
b. Επιλογή Στόχου Επιθυμητής Απόδοσης
c. Προτάσεις
    i. Προτάσεις βελτιστοποίησης
        1. Διορθωτικές κινήσεις,
        2. Προτάσεις βελτίωσης,
        3. Εναλλακτικοί Τρόποι Βελτίωσης
d. Υπολογισμός
    i. Πραγματικού ποσοστού ανακύκλωσης
    ii. Ενεργειακού Αποτυπώματος ανά προιόν και ανά μετακίνηση
    iii. Ποσοστού που μπορεί να ανακυκλωθεί
    iv. Ποσοστού Βελτίωσης ανά περίπτωση
    v. Κόστους Βελτίωσης ανά περίπτωση

6. Το νερό μου – App: Έξυπνα Συστήματα Κατανάλωσης Νερού (SmArt Water)
a. Εισαγωγή Δεδομένων
    i. Καταναλώσεις ανά νοικοκυριό ή επιχείρηση
    ii. Είδη (μπαταρίες, καζανάκια, συστήματα άρδευσης, θερμοσίφωνες)
    iii. Άτομα ανά νοικοκυριό ή επιχείριση (αριθμός, ηλικίες)
    iv. Είδος εργασίας (όπως: Πλυντήρια αυτοκινήτων, Κατασκευαστικές Εταιρείες, Νοσοκομεία, Βιομηχανίες, Αγροτική Παραγωγή)
    v. Δήμοι και Υπηρεσίες καταναλώσεις ανά Δήμο και Υπηρεσίες του
    vi. Κατανάλωση σε απομακρυσμένες περιοχές, Επιχειρήσεις, Υπηρεσίες, Δήμοι
    vii. Όμβρια (μετρήσεις)
    viii. Άρδευση (μετρήσεις)
    ix. Στοιχεία βροχόπτωσης ανά περιοχή (στατιστικά, ένταση, ύψος βροχής, συχνότητα)
    x. Ταμιευτήρες νερού, βιτυοφόρα (Ναι/Όχι)
    xi. Ποιότητα νερού, επεξεργασία νερού
b. Επιλογή Στόχου Επιθυμητής Απόδοσης
c. Προτάσεις
    i. Προτάσεις βελτιστοποίησης
        1. Διορθωτικές κινήσεις,
        2. Προτάσεις βελτίωσης,
        3. Εναλλακτικοί Τρόποι Βελτίωσης
d. Υπολογισμός
    i. Πραγματικής κατανάλωσης νερού ανά Δήμο

ii. Ενεργειακού Αποτυπώματος ανά μετακίνηση υδροφόρων
iii. Ποσοστού που μπορεί να ξαναχρησιμοποιηθεί
iv. Ποσοστού Βελτίωσης ανά περίπτωση
v. Κόστους Βελτίωσης ανά περίπτωση

Άλλα προτεινόμενα προγράμματα μπορεί να είναι τα εξής: SmArt Business Waste (στην βιομηχανία και στον κατασκευαστικό τομέα), SmArt Energy (ΑΠΕ στις επιχειρήσεις),

b. Προγράμματα Ανταπόδοσης/Ανταμοιβής

1. Οικονομικό (π.χ. μείωση φορολογίας, μείωση δημοτικού τέλους ανά δήμο, μείωση εισφορών, μείωση του κόστους για πιστοποίηση προιόντος ή υπηρεσίας ή/και επιδότησης, μείωση εξόδων μέσω πιστοποίησης remote working κοκ),
2. Εκπαιδευτικό (μείωση κόστους για συμμετοχή σε προγράμματα κατάρτισης και πιστοποίησης για επαγγελματίες ή δωρεάν προγράμματα κατάρτισης και πιστοποίησης ανέργους),
3. Εργασίας (ευκαιρίες απασχόλησης σε βιώσιμες περιοχές, νέα αντικείμενα εργασίας για κατοίκους εντός περιοχής),
4. Μετακίνησης- Ενεργειακό (δωρεάν εισητήρια ΜΜΜ, εργασία εντός ή πλησίον του Δήμου κατοικίας)
5. Κτιριακό (Δυνατότητα συμμετοχής στο Εξοικονομώ κατ'οίκον ή σε άλλα προγράμματα όπως προαναφέρονται)

c. Πρόγραμματα Καινοτομικής Πρακτικής (ως υφίστανται),

1. Ενθάρρυνση της καινοτομίας κατά τον σχεδιασμό, την κατασκευή και την λειτουργία κτιρίων για τη διευκόλυνση της αγοράς και τον μετασχηματισμό της βιομηχανίας και των επιχειρήσεων,
2. Στόχευση της εξοικονόμησης ενέργειας μέσω παθητικών μέτρων σχεδιασμού, εξοικονόμησης πόρων κατά την κατασκευή, διαχείρισης μετακινήσεων, αποβλήτων και ηχορύπανσης, ενεργειακής απόδοσης κτιρίων κι ανανεώσιμων πηγών ενέργειας,
3. SmArt apps for All.

Πιθανές Προυποθέσεις Συμμετοχής Πολιτών/Επιχειρήσεων

1. Οικονομικά στοιχεία ή
2. Κοινωνικά στοιχεία,και
3. Παλαιότητα συσκευών, κτιρίων, αυτοκινήτων, και
4. Συμμετοχή σε ένα από τα κάτωθι προγράμματα:
    a. σε Προγράμματα Ανακύκλωσης και Κατάρτισης (π.χ. μετάλλο, έλαια, γυαλί, χαρτί, αδρανή, compost, μπαταρίες, ηλεκτρικές συσκευές κοκ) ανά Δήμο, ή
    b. σε Προγράμματα Διαχείρισης Νερού και Κατάρτισης ανά Δήμο, ή
    c. σε Προγράμματα Απόδοσης Βιωσιμότητας, ενίσχυσης της τοπικής αγοράς κι επιχειρηματικότητας ανά περιφέρεια, ή
    d. σε Προγράμματα Κατάρτισης Νέων Βιώσιμων Πρακτικών στις επιχειρήσεις (π.χ. πιστοποιήσεις, βέλτιστες πρακτικές),
    e. σε Εθελοντικά Προγράμματα βιωσιμότητας ανά Δήμο,
    f. σε Προγράμματα Αρωγής Ευάλωτων Ομάδων.

e) Κατευθυντήριες Οδηγίες

Κατευθυντήριες Οδηγίες για τη μείωση της κατανάλωσης νερού και την βελτίωση της ενεργειακής απόδοσης των κτιρίων εντός της γειτονιάς.

Εφαρμογές Βιώσιμης Ανάπτυξης για ΟΛΟΥΣ - Sustainable development Applications for ALL

Οι ελάχιστες απαιτήσεις για απόδοση μπορεί να είναι οι ακόλουθες:

a. Όλες οι νέες συσκευές πρέπει να έχουν ελάχιστη ενεργειακή κλάση Β της ΕΕ ή ισοδύναμη κατάταξη με ένα εναλλακτικό σύστημα διαβάθμισης.
b. Όλοι οι ανεμιστήρες πρέπει να έχουν μέγιστη ισχύ ανεμιστήρα 0,8 W /l/s.
c. Το σύστημα κλιματισμού πρέπει να έχει ελάχιστο συντελεστή απόδοσης (CoP) 3.4 (δοκιμασμένο σε συνθήκες AHRI Standard 210/240 ή ισοδύναμο).

Οι ελάχιστες απαιτήσεις για είδος συσκευών ή/και εξαρτημάτων μπορεί να είναι οι ακόλουθες:

1. SmArt Water

Μπαταρίες κι εξαρτήματα για ανακύκλωση κι αντικατάσταση όπως:

- Μπαταρίες κουζίνας
- Μπαταρίες μπάνιου
- Τουαλέτες (Καζανάκια)
- Τα ουρητήρια (Καζανάκια)
- Μπαταρίες Μπιντέ
- Μπαταρίες Ντους

2. SmArt KNX

Συσκευές για επισκευή, ανακύκλωση κι αντικατάσταση
όπως:

- Ψυγεία και καταψύκτες
- Φούρνοι
- Πλυντήρια πιάτων
- Πλυντήρια / στεγνωτήρια ρούχων
- Φριτέζες
- Ηλεκτρικοί Θερμοσίφωνες

Συσκευές απόρριψης θερμότητας για **επισκευή,** ανακύκλωση κι αντικατάσταση

- Συστήματα ψύξης (air-conditioning, ανεμιστήρες)
- Συστήματα θέρμανσης (καυστήρες, αερόθερμα, ηλεκτρικά καλοριφέρ, αντλίες θερμότητας)

Οι ελάχιστες απαιτήσεις για είδος φυτών, συσκευών ή/και εξαρτημάτων σε συνδυασμό με υφιστάμενα οικοδομικά υλικά (δρόμοι, πεζοδρόμια) μπορεί να είναι οι ακόλουθες:

3. Enviro – SMART (Υπολογισμός και μικροκλιματικός σχεδιασμός)

- Φύτευση κι Επιλογή φυτών
- Άρδευση,
- Χαρακτηριστικά νερού και
- Απόρριψη θερμότητας στο χώρο λόγω οικοδομικών υλικών έργων υποδομής.

Στοιχεία σχετικά με τον εξοπλισμό και τις συσκευές εξοικονόμησης ενέργειας
Τα αναγνωρισμένα συστήματα εξοικονόμισης ενέργειας έχουν τους εξής χαρακτηρισμούς:

- Energy Star (LEED)
- EU Energy Rating (https://en.wikipedia.org/wiki/European_Union_energy_label, https://europa.eu/youreurope/business/product-requirements/labels-markings/energy-labels/index_en.htm)

Εφαρμογές Βιώσιμης Ανάπτυξης για ΟΛΟΥΣ - Sustainable development Applications for ALL

Τα παρακάτω μπορεί να παρέχουν καθοδήγηση σχετικά με τις τυπικές συσκευές που μπορούν να υπαχθούν να επισκευαστούν εφόσον έχουν ελάχιστη ενεργειακή κλάση Β ή/και να αντικατασταθούν σύμφωνα με το υφιστάμενο σύστημα ενεργειακής κατάταξης. Ο κατάλογος αυτός δεν είναι περιοριστικός και προτείνουμε οι ακόλουθες συσκευές να ταξινομούνται για ενεργειακή απόδοση, εφόσον υπάρχουν:

- Ψυγεία και καταψύκτες
- Φούρνοι
- Μηχανές πάγου
- Κουζίνες
- Φριτέζες
- Τηλεοράσεις
- Πλυντήρια πιάτων
- Πλυντήρια / στεγνωτήρια ρούχων
- Υπολογιστές
- Οθόνες
- Εκτυπωτές, σαρωτές, πολυμηχανήματα
- Ψύκτες / θερμαντήρες νερού

Σχετικοί Πίνακες ενεργειακής απόδοσης συσκευών EU Energy Rating
https://ec.europa.eu/energy/en/eepf-labels (Energy Label Generator)

i. Ψυγεία

Refrigerating appliances, as EEI									
A^{+++}	A^{++}	A^{+}	A	B	C	D	E	F	G
<22	<33	<42/44	<55	<75	<95	<110	<125	<150	>150

ii. Πλυντήρια

Washing machines (pre-2010), in kWh/kg						
A	B	C	D	E	F	G
<0.19	<0.23	<0.27	<0.31	<0.35	<0.39	>0.39

Washing performance index						
A	B	C	D	E	F	G
>1.03	>1.00	>0.97	>0.94	>0.91	>0.88	<0.88

Spin-drying efficiency class (as remaining moisture content)						
A	B	C	D	E	F	G
<45	<54	<63	<72	<81	<90	>90

Washing machines 2010 rating: energy efficiency index (EEI)						
A^{+++}	A^{++}	A^{+}	A	B	C	D
<46	46-52	52-59	59-68	68-77	77-87	>87

iii. Στεγνωτήρια

Condenser dryers, in kWh/kg						
A	B	C	D	E	F	G
<0.55	<0.64	<0.73	<0.82	<0.91	<1.00	>1.00

iv. Πλυντήρια Στεγνωτήρια

Combined washer dryers, in kWh/kg						
A	B	C	D	E	F	G
<0.68	<0.81	<0.93	<1.05	<1.17	<1.29	>1.29

v. Πλυντήρια πιάτων

Dishwashers (12 place settings, in kWh; pre-2010)						
A	B	C	D	E	F	G
<1.06	<1.25	<1.45	<1.65	<1.85	<2.05	>2.05

Dishwashers (as EEI; after 2010)						
A^{+++}	A^{++}	A^{+}	A	B	C	D
<50	<56	<63	<71	<80	<90	>90

vi. Κλιματιστικά

Air conditioners, cooling EER in W/W						
A	B	C	D	E	F	G
>3.2	3.0–3.2	2.8–3.0	2.6–2.8	2.4–2.6	2.2–2.4	<2.2
Air conditioners, heating COP in W/W						

A	B	C	D	E	F	G
>3.6	3.4–3.6	3.2–3.4	3.0–3.2	2.8–3.0	2.6–2.8	2.4–2.6

vii. Τηλεοράσεις

Televisions, as EEI(%)									
A^{+++}	A^{++}	A^{+}	A	B	C	D	E	F	G
<10	<16	<23	<30	<42	<60	<80	<90	<100	>100

viii. Ενδεικτικός Πίνακας Καταναλώσεων υδραυλικών εξαρτημάτων και συσκευών

Πίνακας: Ελάχιστη προσαρμογή νερού, τοποθέτηση ή συσκευή	**Ροή/Όγκος**
Μπαταρία Μπανιέρας	Ροή 6 litres/min, πίεση 413.7 kPa
Μπαταρία Ντους	Ροή 9.5 litres/min, πίεση 551.6 kPa
Μπαταρία κουζίνας	Ροή 6 litres/min πίεση 413.7 kPa
Μπιντέ	Ροή 6 litres/min πίεση 413.7 kPa
Τούρκικες τουαλέτες, Ουρητήρια	Ροή 0.5 litres/πάτημα
Καζανάκια διπλής ροής	Ροή 6/4 litres/πάτημα
Ablution fixtures	Ροή 6 litres/min πίεση 413.7 kPa
Πλυντήριο πιάτων	Ροή 1.3 litres/κύκλο
Πλυντήριο ρούχων	Ροή 8.5 litres/kg για καθε φορτίο ρούχων

E. Εξαιρούμενες περιοχές εφαρμογής (Προστασία του Περιβάλλοντος)

- Εξαιρούνται οι περιοχές Natura 2000 και οι προστατευόμενες περιοχές.
- Δασικές περιοχές όπου υπάρχοντα είδη μπορεί να υποβαθμιστούν ανεπανόρθωτα (ΜΠΕ, Αξιολόγηση κινδύνου).

F. Ωφελούμενες ομάδες αυτής της δράσης

- Πολίτες και οι οικογένειές τους,
- Τοπικές αρχές,
- Επαγγελματίες κι Επιχειρήσεις,
- Εκπαιδευτικοί οργανισμοί,
- Ερευνητικά Κέντρα,
- Τουρισμός,
- Φυσικό & Δομημένο Περιβάλλον,
- ΜΚΟ

G. Συνεργαζόμενοι Φορείς

- ΥΠΕΝ,
- Υπουργείο Αγροτικής Ανάπτυξης,

- Υπουργείο Εργασίας,
- Υπουργείο Υποδομών,
- Υπουργείο Δημοσίας Τάξης,
- Υπουργείο Παιδείας,
- Κτηματολόγιο – Πολεοδομία,
- ΟΑΕΔ,
- Αστεροσκοπείο Αθηνών, Copernicus,
- ΓΥΣ,
- ΔΗΜΟΚΡΙΤΟΣ,
- Γενικό Χημείο του Κράτους,
- Γεωπονικό Πανεπιστήμιο Αθηνών,
- Τοπικές Αρχές,
- ΕΣΥΔ,
- Κέντρα Διαχείρισης Απορριμάτων,
- ΕΥΔΑΠ, ΔΕΗ

Η. Αναλυση Ρίσκου

Η ανάλυση ρίσκου στα πλαίσια α. Περιβαλλοντικών επιπτώσεων, β. Νέας Τεχνολογίας και γ. Κοινωνικών και Οικονομικών Επιπτώσεων αναλύονται στην επισυναπτόμενη πρόταση του Dimitra@HRA και ισχύουν και για τα σχετικά αντικείμενα του EVA@HRA οπώς και για τις εφαρμογές SmArt.

Ι. Νομικοί Όροι

" Δικαιώματα πνευματικής ιδιοκτησίας - Δικαιώματα ευρεσιτεχνίας - Πνευματικά δικαιώματα»

Δικαιώματα πνευματικής ιδιοκτησίας" αναφέρονται σε δικαιώματα πνευματικής και / ή βιομηχανικής ιδιοκτησίας, συμπεριλαμβανομένων, ενδεικτικά, διπλωμάτων ευρεσιτεχνίας, σχεδίων, υποδειγμάτων χρησιμότητας, δικαιωμάτων πνευματικής ιδιοκτησίας, δικαιωμάτων βάσης δεδομένων, εμπορικών σημάτων, δικαιωμάτων τεχνογνωσίας, εμπορικού απορρήτου και εμπιστευτικών πληροφοριών. παρόμοιου ή ισοδύναμου αποτελέσματος οπουδήποτε στον κόσμο είτε είναι εγγεγραμμένο είτε όχι, συμπεριλαμβανομένων των εκκρεμών αιτήσεων για την καταχώριση τέτοιων δικαιωμάτων. Πιο συγκεκριμένα, ο όρος "δικαιώματα πνευματικής ιδιοκτησίας" αναφέρεται στα κέρδη είτε οικονομικά είτε άλλα (όπως φήμη, αναγνώριση, κοινωνικά πλεονεκτήματα ή αλλιώς) που θα μπορούσαν να γίνουν με την εκμετάλλευση μιας πρωτότυπης δημιουργίας / εργασίας από επιχειρήσεις ή εταιρείες.

Η Ομάδα διατηρεί την κυριότητα όλων των εγγράφων, πρωτοτύπων και πληροφοριών (σε οποιαδήποτε μορφή) κι όλων των Δικαιωμάτων Πνευματικής Ιδιοκτησίας που περιέχονται σε αυτά, τα οποία παρέχονται από την Ομάδα ή για λογαριασμό της.

J. Συναίνεση

Όλα τα μέλη της ομάδας η Leader Κα Κάππου Σοφία (Μηχανικός Περιβάλλοντος και Πολιτικός Μηχανικός) και η Co Leader Κα Αλευροφά Εμμανουέλα (που εκπροσωπεί την εταιρεία Digital Beings), έχουμε συναινέσει γραπτά ή/και προφορικά και συναινούμε και με το παρόν για την κατάθεση των προτάσεων και των πρωτοτύπων εγγράφων, πληροφοριών και των βάσεων δεδομένων που συντάξαμε, στα πλαίσια του GO 4 Green Crowdhackathon του ΥΠΕΝ για να χρησιμοποιηθούν ωφέλιμα από το Υπουργείο, τις Περιφέρειες και τους Δήμους αλλά κι από άλλους φορείς του Δημοσίου εντός κι εκτός της Ελλάδας για την αποκατάσταση, την πρόληψη και τη βιώσιμη ανάπτυξη των πλησιεσών αλλά κι όλων των περιοχών. Θα είμαστε ιδιαίτερα ευτυχείς κι ευγνώμονες εάν χρησιμοποιηθούν και τα ονόματα έχουμε δώσει στις εφαρμογές και στις διαδικτιακές πλατφόρμες δηλαδή Dimitra, EVA, SmArt.

Με εκτίμηση για την ομάδα,
Σοφία Κάππου

PROPOSAL - FIREATHON

Proposal's Name:

Dimitra@HRA

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

A. Project Name

Dimitra@HRA (*High Risk Areas*) Website: (*"Dimitra – High Risk Areas Microclimate Monitoring")*

B. Project brief/description

This project aims at conceiving and building a dynamic website providing various databases (i.e. vegetation, environmental elements, microclimate/meteorology, geology, agriculture parameters etc.) as well as mapping and gathering official relevant data that will allow the users of the above mentioned website to be able to comprehend the conjecture of those parameters in order to prevent a fire.

This project/website also aims at suggesting technical solutions for optimum microclimate design and adaptable vegetation per area, in order to mitigate fire risk in High Risk Areas (HRA), and prevent future fire risk by creating natural zones of fire control (Controlled Fire Fronts) and foreseeing what has to change and/or be adapted in terms of vegetation and /engineering /administration. This service will initially be available on a case-by-case basis, and on demand of users through the website.

C. Category

Rehabilitation and Prevention

D. Team that submits the Proposal

Name and Surname: Sophia Kappou (Team Leader)
Attribute: Civil Engineer, Environmental Engineer/ Project HSQE Manager/ Sustainability Coordinator/Technical Project Manager in Infrastructure, Marine & Building Projects
Experience related to the proposed project: as mentioned here above
Availability (hours / week): 10 hours & Extra hours when required
Remote collaboration / Meeting capabilities: After notification

Name and Surname: Emmanuella Alevrofas (Team Co-Leader)
Attribute: Law consultant (intellectual property)/ EU researcher/
Web project manager/graphic designer/business owner
Experience related to the proposed project: TBA
Availability (hours / week): 4
Remote collaboration / Meeting capabilities: After notification

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

Name and Surname: Iasonas Tzanakakis
Attribute: Civil Engineer
Experience related to the proposed project:
Availability (hours / week): 5 (distance collaboration)
Remote collaboration / Meeting capabilities: After notification

Name and Surname: Yvonne Elli Ouzounidi
Attribute: Mechanical Aeronautical Engineer
Experience related to the proposed project:
Availability (hours / week): 5
Remote collaboration / Meeting capabilities: After notification

Name and Surname: Alexandros Mountrihas
Attribute: web developer/3D artist
Experience related to the proposed project: TBA
Availability (hours / week): 4
Remote collaboration / Meeting capabilities: After notification

Name and Surname: Theodore Dimitriadis
Attribute: Senior Drupal Developer
Experience related to the proposed project: TBA
Availability (hours / week): 4
Remote collaboration / Meeting capabilities: After notification

Name and Surname: Vasilis Salapatas
Attribute: Chemical Engineer/IT/Co-Founder SciFy
Experience related to the proposed project:
Availability (hours / week): -
Remote collaboration / Meeting capabilities: After notification

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

E. The Project

a. Brief Description/Title (Scope of Works)

Conceiving a website using ***the case study of a given area (Mati Village) in terms of Climatological and Environmental Information*** with the ambition of expanding the collected information to more geographical areas in the future. This website will have the vocation of contributing to mitigating or even preventing fire risk in HRA caused by either natural or adverse conditions, pure organization or lack of information. It will provide tools to those using it to develop a sustainable reference model in the medium term and adaptable to other similar cases, conditions and applications.
It will also allow its visitors to address our team with their specific request of a tailored solution –for a given situation *(service on demand).*
In the long term, our vision is to transform this website in an application, allowing real time simulations.

b. Selected Area for the Prototype Application

The village of Mati, which belonged initially to the Municipality of Nea Makri, and since 2011 is part of the wider Kallikrati municipality of Marathon will be selected for Climate and Environmental Data.

c. Scientific Data

Input information can be organized as follows:

1. (Local) Climate, Climate Change Data - Changes by Region,
2. Environmental indicators - measurements (i.e. Humidity, Temperature, Wind, Rain Precipitation, Soil Composition)
3. Microclimate simulation models on demand,
4. Tailorable Risk Models on demand,
5. Geomorphological Data, Urban Maps, Infrastructures Maps,
6. Fire Front Conditions (temperature, humidity, wind)
7. Fire Protection data,
8. Fire Statistical Data,
9. Microclimate Data~~,~~
10. Reforestation data in the form of adaptable plant species, fire resistant plants, mixed forest stands and trees i.e. allowing the visitor of the website to deduce the different potential combinations of species with different survival strategies, both tolerant to drought (water wise) and able to resist fire (fire wise),
11. Available resources in real time.

The action of our website could be combined with ground sensors or satellite receipts or drones of local humidity and ground temperature conditions in real time for more detailed recording of the conditions that contribute to the microclimate of each mixed and forest area.

It could also be combined with voluntary and local reforestation actions, planting in privately owned plots, use of fire resistant materials in homes as well as civil protection parameters.

It has the vocation of seeking the support of environmental and other organizations, specialized scientists etc.

d. Purpose of action

The purpose of the action is to achieve in the future the optimal plan for afforestation and rehabilitation of affected/damaged areas in order to improve the microclimate of forest mixed areas (i.e. *Mediterranean villages*) which are statistically defined as high fire, drought or flood - risk areas, and therefore prevent and control similar extreme and high risk conditions which are mostly triggered by climate change.
This action shall become a model transferable to any geographical area –other than our initial case study, that is to say, the Mati area.

Consequences & extensions of this action:

- Creation of mixed forest/urban reforestation areas and micro-climactic ecosystem with fire resistance, which will survive through a drought and absorb water during an intense rainfall. (Microclimatic conditions).
- Creation of fire-protected buildings in the affected areas with construction materials that absorb less solar radiation during daytime and radiate less heat at night.
- Creation of underground infrastructure projects (e.g.: *water supply*) to be protected from combustion and high temperatures.
- Changes in the composition of tree species in mixed forest/urban areas combining species with different survival strategies and drought-tolerant species.

e. The problems it aims to solve

- It aims at solving the problem of fire caused by extreme weather conditions and enhanced by local microclimate conditions due to climate change.
- It aims at solving the problem of uncontrolled fire spread in inhabited areas under the existing conditions.
- It aims at solving the problem of reforestation and contributing to the protection of mixed forest/urban areas by optimizing the design of mixed reforestation areas in order to create a natural environment more responsive to the changing environmental conditions and enhancing species adaptation to climate change.
- It aims at communicating the risk in order to inform a majority of citizens (to better protect them).

f. Excluded Areas (Environmental Protection)

- It excludes Natura 2000 and Environmentally Protected Areas.
- Forest Areas where existing species may be irreversibly degraded (EIAs, Risk Assessment).

g. Expected results / Deliverables

- Mapping of the optimum vegetation conditions in the area (Fire Wise & Water Wise Plants,

Water Sustainability, etc.).

- Plan Approaches with optimization and differentiation of input parameters, design parameters, as well as comparative results of different microclimate models.
- Prediction of the microclimate's behavior of models in the short and long term by area.
- To achieve greater diversity and better structured vegetation areas more adaptable to climate change (microclimatic conditions).
- Raising awareness of citizens, local communities, schools, interns and/or students for voluntary participation in reforestation actions (reforestation campaigns can be organized and held).
- Pilot application in a reforestation area and/or damaged/affected mixed area.

h. Beneficial target groups of the this action

- Local Citizens and their families
- Environment
- Tourism
- NGOs
- Research Centers
- Local Authorities
- Other Authorities
- Local commerce
- Educational entities
- Professionals in either one of the targeted fields who would acquire and develop knowledge from the application of the programme and its various/applied uses.

i. Way and timing of implementation – Deadlines

Activity, Products, Services	Time Schedule during # Fireathon
Site visit - References – Proposal Phase 1 & 2	25/07/2018 – 03/09/2018
Selection of additional necessary information	04/09/2018 – 09/09/2018
Development of Databases	07/09/2018 – 18/09/2018
Website Development	18/09/2018 – 23/09/2018 – 03/10/2018

j. Collaborating bodies during #Fireathon

- National observatory of Athens (Local Climate and Microclimate parameters).
- Agricultural University of Athens (Plants database, Soil Database).
- Democritus (Local Environmental measurements).
- Local Authorities (*if required*).

Project Name: Dimitra@HRA Website

F. Project Technical Description and Cost

a. Technology

In order to promote our concept, it is crucial that the technologies on which it is based, are not protected by patents or proprietary rights.
We have researched the Global Index of EPO, the National Patents Center and the Web, for the specific Patent, based on thorough research, and no similar integrated project or bibliography was found.

Technology that supports our idea

a. The Mati village, in Marathonas Municipality will be selected,
b. Data will be collected from reliable official sources –both Greek and European- in order to create databases with necessary information i.e.: *climate and microclimate factors*, *vegetation database, environmental factors, fire intensity factors, precipitation factors, local soil parameters, GIS Maps*.
c. A mapping website will be implemented –in the first place; it will include:
    i. Area, infrastructure, vegetation, existing and initial vegetation (moisture, temperature and necessary growth parameters,)
    ii. All vegetation – suggested (necessary growth parameters are to be taken into account, as are also –among others- soil composition and nutrients, irrigation, vital parameters, ranges.)
    iii. Temperature & Microclimate conditions
d. Vegetation response, growth, sustainability and rate in high risk conditions will be provided on demand.
e. Risk analysis, Microclimate Analysis and Design will be provided on demand.

Access Rights

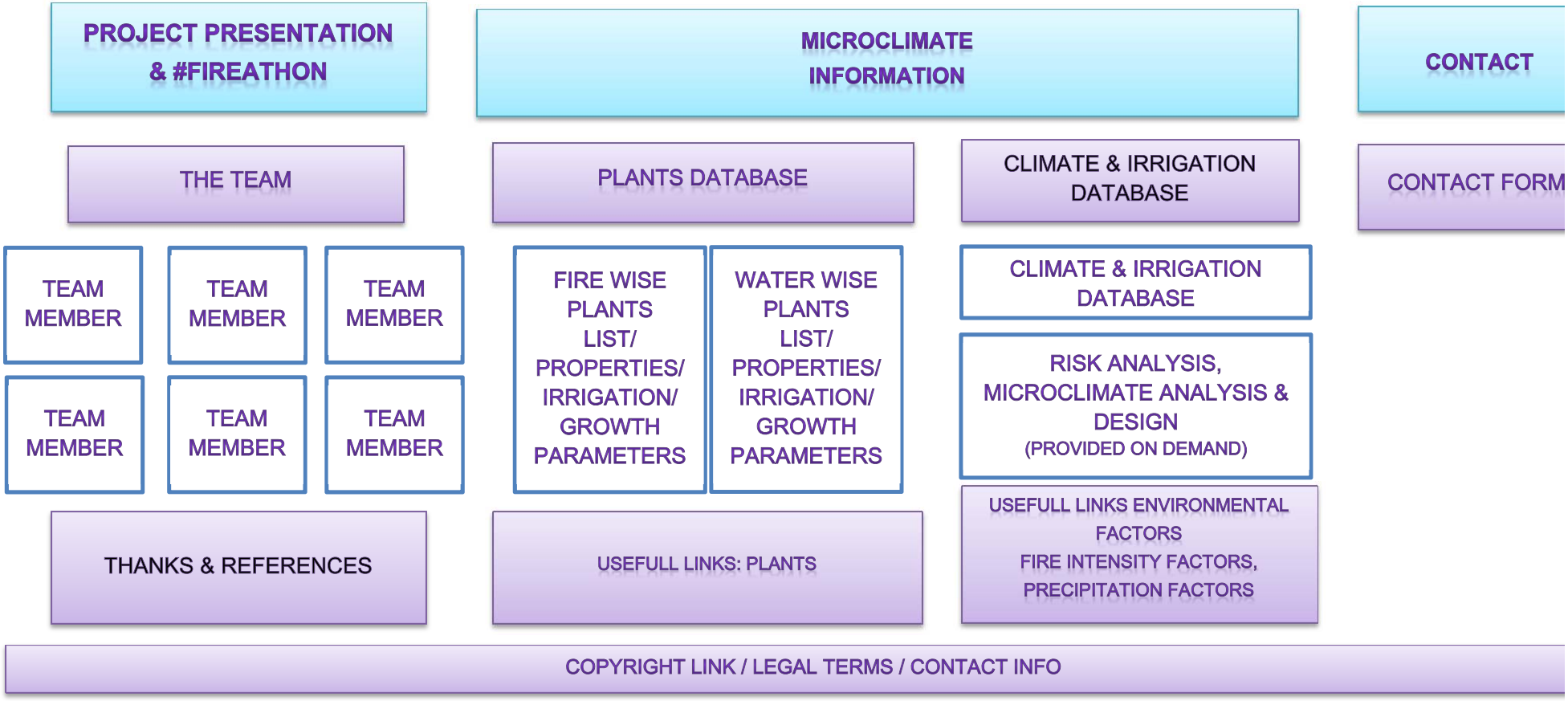
Access rights, giving sources that can be cross-referenced are included in paragraph I. References/Links.

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

Proposed Website Design

Dimitra – High Risk Areas Microclimate Monitoring / Dimitra@HRA (*High Risk Areas*) Website



FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

b. Cost Analysis

Running Costs for the development during #Fireathon

Item Description	Unit	Quantity	Rate €	Total Cost €	Covered by
The Team					
Engineers (Section D)	Working hours	270	40		The Team
Legal (Section D)	Working hours	50	40		The Team
IT/Web/Drupal	Working hours	100	40		The Team
Development of Databases					
• Vegetation	Working hours weekly extra	5	40		The Team
• Environmental Conditions	Working hours weekly extra	5	40		The Team
• Climate & Microclimate Conditions	Working hours weekly extra	5	40		The Team
Web & tech resources					
• PC/Laptop	Item	7			The Team
• Server	Item	1			
• Printers & Copiers	Item	2			The Team
• UPS	Item	1			The Team
• Firewall	Item	1			The Team
• Cloud/ftp	Item	1			The Team
• Domain name	Item	1			The Team
• Hosting provider	Item	1			The Team
• Antivirus	Item	7			The Team
Charges					
• Communication use charges	People	8			The Team
• Internet use charges	Monthly bill	8			The Team

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

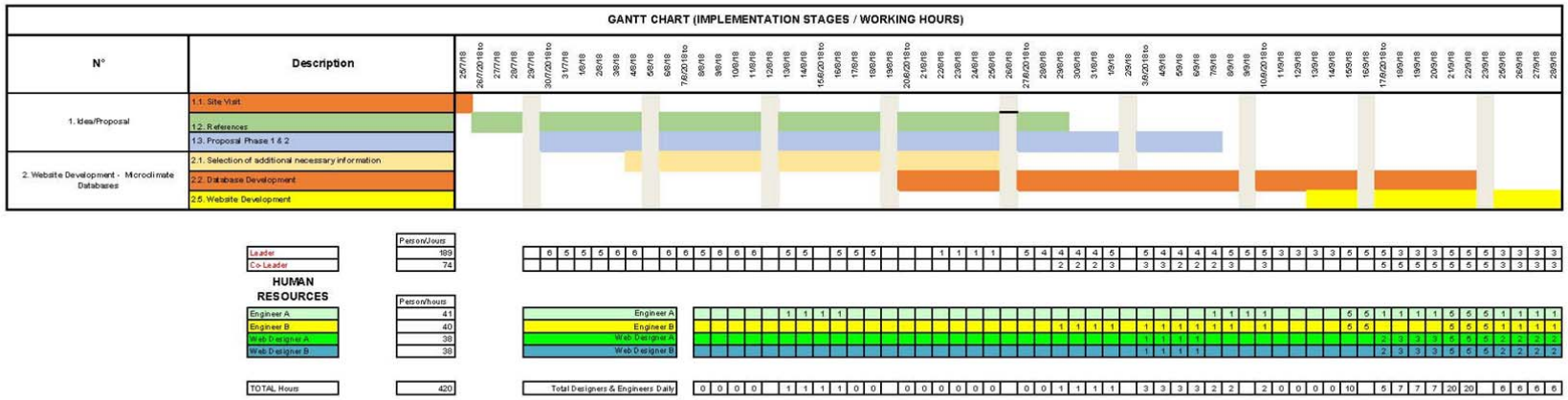
Project Name: Dimitra@HRA Website

Item Description	Unit	Quantity	Rate €	Total Cost €	Covered by
Office supplies					
• Paper	Item			200	#Fireathon
• Ink Cartridges	Item				#Fireathon
• Folders	Item				#Fireathon

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

c. Gantt Chart



FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

G. Risk Analysis

a. Magnitude definition

MAGNITUDE	DEFINITION
MAJOR NEGATIVE	Impact has serious consequences and/or on a large area/international scale. severe financial or reputational damage; heavy or several measures from supervisory authority.
MODERATE NEGATIVE	Impact with undesirable consequences felt outside project area. limited financial or reputational damage;
MINOR NEGATIVE	Discernable negative impact and/or likely to recover from temporary impacts within several weeks or months. Negligible financial or reputational damage.
NEGLIGIBLE	No impact or no discernable impact.
MINOR POSITIVE	Discernable positive impact and/or on a small area; and a slight improvement in quality of the environment and human health.
MODERATE POSITIVE	Impact with favorable consequences; Large improvements in quality of life/human health; Significant quantifiable reduction in levels of pollution.
MAJOR POSITIVE	Impact provides substantial gains and/or on a large area; Large quantifiable reductions in pollutant levels.

Project Name: Dimitra@HRA Website

b. Possible Risks

IT Innovation Risks

Expected negative reaction from stakeholders, integrity impact – Mitigation measures

Risks	Impact	Mitigation
Innovation Timeline	MAJOR POSITIVE	Should be communicated with the stakeholders within the Fire Danger Period – (in Greece from May 1st to October 30th)
Protecting Innovation	MAJOR NEGATIVE	Requires Legal Binding and good communication and control for Innovation adaptation.
Open Innovation	MAJOR NEGATIVE	Requires Legal Binding and good communication and control for Innovation adaptation.
Integrity Risk	MAJOR NEGATIVE	Requires Legal Binding, proper search, Policy and procedures, Systems and controls.
Communication Risks	MAJOR NEGATIVE	Development of communication activities and preparation of a plan. Seek an effective two way channel of communication between the Project and the local communities. Engagement process will be inclusive and all vulnerable groups will be attended to and informed.
Relationships between Parties	MAJOR NEGATIVE	Through different communication and engagement methods, parties in the immediate vicinity of the project will be kept informed about the planned activities, timelines, potential impacts and changes to schedules. Requires Legal binding and protection.
3rd parties deliverables (i.e. suppliers) + their integration to the project	MAJOR NEGATIVE	Through different communication and engagement methods, parties in the immediate vicinity of the project will be kept informed about the planned activities, timelines, potential impacts and changes to schedules. Requires Legal binding and protection.
Regulation and Societies	MAJOR NEGATIVE	Project's environmental and social commitments and Policy will be posted on the Project's website.
Contracts (breaches of contracts) and Risk Sharing	MAJOR NEGATIVE	Requires Legal binding and protection.

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

Soft Landscaping & Construction Risks

Expected negative reaction from stakeholders or health, safety and environment impact - Mitigation measures.

Risks	Impact	Mitigation
Landscape set-up	MAJOR NEGATIVE	Ensure that vegetated areas are surveyed by a suitably qualified scientist prior to commencing any works located within sensitive areas. Ensure that hazardous waste is stored and handled properly. Timeliness factor for planting is essential and the most favorite period is from September to December.
Area Clearance	MAJOR NEGATIVE	Ensure that hazardous waste is stored and handled properly. Permits Required. Asbestos Handling.
Sensitive Human Receptors	MAJOR NEGATIVE	Environmental and Management Plan will be prepared particular to this Project and will be strictly followed including any instruction demanded by the outcome of Environmental Permits.
Sensitive Environmental Receptors		Environmental and Management Plan will be prepared particular to this Project and will be strictly followed including any instruction by the outcome of Environmental Permits.
Erosion and Sediment Impacts	MAJOR NEGATIVE	Sediment control practices to be installed prior to any up-slope soil disturbing activities.
Surface Water Impacts	MAJOR NEGATIVE	Environmental and Management Plan will be prepared particular to this Project and will be strictly followed including any instruction by the outcome of Environmental Permits.
Soil and Ground water Impacts	MAJOR NEGATIVE	Environmental and Management Plan will be prepared particular to this Project and will be strictly followed including any instruction by the outcome of Environmental Permits.
Waste storage and disposal	MAJOR NEGATIVE	All hazardous wastes to be stored either within a dedicated skip located upon concrete hard standing, or within secondary containment Waste to be disposed of off-site via an approved carrier & at an appropriately licensed disposal site.
Existing services obstructing the works	MINOR NEGATIVE	Design and methodology will be prepared as early as possible and submitted for Authority approval in order to avoid delay.

FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

Socioeconomic Risks

Expected negative reactions from different stakeholder groups (groups affected by the idea) – Mitigation measures.

Group/ Stakeholders	Impact	Mitigation
Local Authorities	MINOR NEGATIVE	Restoration of areas to their original condition where possible upon completion of construction; Close collaboration with the competent authorities.
Local Citizens/ Communities	MAJOR POSITIVE	Communicate; coordinate with Local Citizens/Communities. Create Restoration Camps, Volunteer Groups etc.
Coordination with External Entities and Addressing Complaints	MINOR NEGATIVE	A community liaison officer will be present at each work front to immediately capture complaints.
Impacts to recreation and tourism	MAJOR POSITIVE	Nature and village recreation focused users and tourists that appreciate the local visual amenity.
Impacts to livelihood of local community	MAJOR POSITIVE	Livelihood activities and increase of local current level of income. Houses and landscaping will be restored. Cost of materials/plants should be kept in low levels.
Impact on local economy	MAJOR POSITIVE	The local community will be safeguarded, the environment will be restored and the risk for high risk situations will be minimized.
NGOs, Other Authorities & Organizations	MAJOR POSITIVE	They will actively participate. Communicate; coordinate with Local Citizens/Communities. Create Restoration Camps, Volunteer Groups etc.

H. Legal Terms Index

- **"Organization":** The NGOs SciCo and SciFy, the group of Scientists and the Committee of #Fireathon who initiated this Voluntary Action.
- **"Team":** as the Team that submits the Proposal and collaborated to the completion of this Proposal.
- **"Team leader":** The person that initiated and developed this idea/proposal
- **"Parties":** The Organization, the Team, and Third Parties.
- **"Third Parties":** Consumer groups, other NGOs, the public sector, industry.
- **"Proposal" or "Project" or "Works":** This document and every document, the technology that supports it, the website that will be designed and implemented but also its code, mock-ups, content, databases, logo.
- **"Delegation of Authority":** The Team may authorize a member of this Team to act on behalf of the Team for the support of the completion of this Proposal.
- **"#Fireathon":** The committee of this voluntary action.
- **"Legislation":** The Greek and European Legislation for Intellectual Property, Works, Patents, IT Products and Intellectual Property Rights.
- **"Working hour": As stated at section D. Team that Submits the Proposal.**
- **"Open Source"**: denoting software and/or technologies for which the original source code is made freely available and may be redistributed and modified. As opposed to the final product.
- **"Product"**: the integrality of what we will produce, that is to say the website per se, but also the service provided on demand through it, that is to say, a tailorable solution and representation in 2D and 3D of the ideal conditions in order to prevent fire in high risk areas.

a. Confidentiality

"*Confidentiality*" means all information, whether written or oral, supplied by or on behalf of the organization, and the team *which is designated as confidential at the time of supply or is of a confidential nature*. Both parties agree that:

(a) They shall treat all Confidential Information as confidential and shall not disclose the Confidential Information, in whole or in part, and shall not use it for any other reason than for the sole purpose of this proposal, except for if it is agreed otherwise in writing by the integrality of the team;

(b) Both parties may disclose the Confidential Information to either the integrality or part of its employees, agents, associates or subcontractors and advisors, whose participation, review or evaluation is essential and who are informed of the confidential nature of the Confidential Information and agree to be bound by the terms and conditions of this Sub-Clause retaining full liability for any breach by them –even by lack of due diligence (inadvertently);

(c) They shall not disclose any Confidential Information to any other third party person (*individual or moral person*) without the prior written consent of the team, and they may not disclose the Confidential Information without the integrality of the team's prior consent to such of the Contractor's employees, agents, associates or subcontractors and advisors, whose participation, review or evaluation is essential and who are informed of the confidential nature of the Confidential Information and agree to be bound by the terms and conditions of this Sub-Clause retaining full liability for any breach by them;

(e) The supply of Confidential Information pursuant to this Proposal shall not be construed as the grant of any license, right of ownership or other right in respect of the Confidential Information;

(f) The obligations contained in this Sub-Clause shall survive termination of the Contract and/or its termination."

b. Intellectual Property Rights – Patents Rights - Copyrights

"*Intellectual Property Rights*" refers to any intellectual and/or industrial property rights including, *without limitation*, patents, designs, utility models, copyright, database rights, trade marks, rights in know-how, trade secrets and confidential information and any other rights of similar or equivalent effect anywhere in the world whether registered or not and including pending applications to register such rights; more precisely, the term "intellectual property rights" refers to the earnings in either financial or other terms (such as fame, recognition, social advantages or else) which could be made by the exploitation of an original creation/work.

The Team shall retain ownership of all documents, prototypes and information (*in whatever form*) and all Intellectual Property Rights contained therein which are provided by or on behalf of the Team in relation to the Project or the Works. The Organization shall ensure that all Personnel and Subcontractors only use such documents and information strictly in accordance with:

(a) The requirements of the Team;

(b) The terms of any license granted by the Team to the Organization or sublicense granted by the Team to the Organization, but only to the extent that such requirements and/or such terms are notified to the Organization."

But Intellectual Property Rights also refers to all results, products and applications –sustainable or not- of the above mentioned patents, designs, utility models, copyright, database rights, trade marks, rights in know-how, trade secrets and confidential information.

Project Name: Dimitra@HRA Website

c. Declaration

We declare that all of the above-mentioned team members, working on the proposed project, agree that this project will be implemented in order to:

(a) Create open, freely accessible, integrated IT products/patents -and make them available according to the Confidentiality and Intellectual Property Rights sub-clauses as defined and mentioned above.

(b) The IT products will combine the capabilities of the engineers and IT developers of the team, and will be supported by researchers and industry specialists in order to create these products while remaining in constant communication with the public (e.g. *selected consumer groups, NGOs, the public sector etc.*).

(c) The team will deliver the product and the implementation details, to selected Organizations/entities according to a legal agreement between both parties and actively support their dissemination, so that new technologies, products and applications can be built on them.

Signed by:

The Team

SOFIA KAPPOU
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FIRE/MICROCLIMATE IMPLEMENTATION PROPOSAL

Project Name: Dimitra@HRA Website

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DATABASES & TOLERANCES

(Tolerances: Fire, Drought, Moderate Drought, Extreme Drought, Frost, Wind, Extreme Wind, Flood, Maritime Exposure, Salt, Low Salt, Alkalinity, Pollution, Air Pollution)

DIMITRA@HRA DATA

METEO STATIONS

Monthly Mean Temperature (°C)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NEA FILADELFEIA	Minimum Monthly Temperature	5.2	5.4	6.7	9.6	13.9	18.2	20.8	20.7	17.3	13.4	9.8	6.8
	Monthly Mean Temperature	8.7	9.3	11.2	15.3	20.7	25.6	28.0	27.4	23.3	18.1	13.7	10.3
	Maximum Monthly Temperature	12.5	13.5	15.7	20.2	26.0	31.1	33.5	33.2	29.2	23.3	18.1	14.1
ELLINIKO	Minimum Monthly Temperature	7.0	7.1	8.4	11.4	15.8	20.1	22.8	22.8	19.6	15.6	12.0	8.8
	Monthly Mean Temperature	10.3	10.6	12.3	15.9	20.7	25.2	28.0	27.8	24.2	19.5	15.4	12.0
	Maximum Monthly Temperature	13.6	14.1	15.7	19.4	24.1	28.7	31.8	31.7	28.2	23.2	18.8	15.2
TATOI	Minimum Monthly Temperature	3.2	3.5	4.9	7.7	11.9	16.2	19.2	19.3	15.6	11.8	7.9	4.9
	Monthly Mean Temperature	7.3	7.8	9.9	14.2	19.6	24.6	26.9	26.3	22.1	17.0	12.4	8.9
	Maximum Monthly Temperature	11.7	12.5	14.7	19.3	24.9	29.9	32.1	31.8	28.0	22.5	17.4	13.2

Monthly Mean Humidity (%)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NEA FILADELFEIA	Monthly Mean Humidity	74.5	72.2	68.8	61.7	53.9	46.1	43.1	45.3	53.7	66.1	74.3	76.1
ELLINIKO	Monthly Mean Humidity	68.8	68.0	65.9	62.6	59.0	52.8	47.0	47.1	53.4	62.1	68.7	70.2
TATOI	Monthly Mean Humidity	77.4	74.9	71.7	65.1	56.3	47.6	44.8	46.1	55.7	67.1	76.2	78.7

Monthly Mean Rainfall (mm)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NEA FILADE	Monthly Mean Rainfall	56.9	46.7	40.7	30.8	22.7	10.6	5.8	6.0	13.9	52.6	58.3	69.1
NEA FILADELFEIA	Total Days Raindays	12.6	10.4	10.2	8.1	6.2	3.7	1.9	1.7	3.3	7.2	9.7	12.1
ELLINIKO	Monthly Mean Rainfall	48.3	40.9	39.7	26.0	15.2	5.6	5.2	7.0	9.6	47.8	55.4	64.1
	Total Days Raindays	13.2	11.8	11.9	9.7	6.8	3.7	1.6	1.8	3.9	8.9	11.3	13.7
TATOI	Monthly Mean Rainfall	69.2	48.6	51.1	26.2	20.4	9.8	10.0	6.0	17.6	47.6	60.2	83.9
	Total Days Raindays	11.0	9.6	9.4	8.0	5.6	3.1	1.6	1.5	3.2	6.7	9.4	12.5

Monthly Mean Wind Power (Kt)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NEA FILADELFEIA	Monthly Mean Wind Direction	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ	ĪĪ
	Monthly Mean Wind Power	5.6	6.0	6.1	5.3	5.0	5.4	6.7	6.6	5.8	5.6	4.6	4.8

SATELLITE DATA

MATI/NEA MAKRI

Precipitation		Sunlight		Temperature (°C)	
January	59,95	January	124.82	January	9,11
February	52,81	February	128.99	February	9.53
March	51,96	March	182.49	March	11.13
April	28,39	April	233.7	April	15.41
May	12,74	May	288.68	May	20.09
June	5,09	June	354.09	June	25.03
July	6,74	July	355.71	July	28.2
August	5,29	August	329.6	August	27.28
September	7,53	September	276.07	September	23.58
October	41,34	October	202.05	October	19.33
November	55,74	November	141.76	November	14.3
December	73,24	December	113.4	December	11.06

AREAS	
STATION 1	NEA FILADELFEIA
STATION 2	ELLINIKO
STATION 3	TATOI
SATELLITE DATA	MATI

DIMITRA@HRA DATA

ELLINIKO	Monthly Mean Wind Direction												
	Monthly Mean Wind Power	7.6	7.7	7.3	6.4	6.0	6.4	7.6	7.8	7.0	7.1	6.7	7.4
TATOI	Monthly Mean Wind Direction												
	Monthly Mean Wind Power	6.4	6.4	6.6	5.2	5.3	5.5	7.0	7.3	6.5	6.6	5.1	5.7

USEFULL LINKS
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https://climate.copernicus.eu/sites/default/files/repository/Hydrological_variables/Data_for_month_7_2017_plot_9.txt

MATI/NEA MAKRI - NOT FOR DATABASE USE					
Precipitation (mm)		Sunlight		Temperature (°C)	
January	59,95	January	124.82	January	9,11
February	52,81	February	128.99	February	9.53
March	51,96	March	182.49	March	11.13
April	28,39	April	233.7	April	15.41
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November	55,74	November	141.76	November	14.3
December	73,24	December	113.4	December	11.06

DIMITRA@HRA DATA

DESIGN MANUAL

IRRIGATION	PLANT AGE	SEASON	AVERAGE MONTHLY PERCIPITATION MM	AVERAGE MONTHLY TEMPERATURE	AVERAGE RELEVANT HUMIDITY	WATER in WATER TANKS (L/Month) (IRRIGATION)	WATER in WATER TANKS (L/Day) (IRRIGATION)	MONTHLY WATER SAVINGS FROM IRRIGATION CONTROLLER (L)	TREES				PALMS				SHRUBS				GROUND COVER & GRASSES			
									MONTHLY QUANTITY (network water) (L)	INTERVAL (DAYS)	REDUCED QTY/DAY (L/DAY)	AVERAGE QTY/DAY (L/DAY)	MONTHLY QUANTITY (network water) (L)	INTERVAL (DAYS)	REDUCED QTY/DAY (L/DAY)	AVERAGE QTY/DAY (L/DAY)	MONTHLY QUANTITY (network water) (L)	INTERVAL (DAYS)	REDUCED QTY/DAY (L/DAY)	AVERAGE QTY/DAY (L/DAY)	MONTHLY QUANTITY (network water) (L)	INTERVAL (DAYS)	REDUCED QTY/DAY (L/DAY)	AVERAGE QTY/DAY (L/DAY)
**** HIGH with Irrigation - MEDIUM with Water Tanks & Controlled Irrigation	1-2 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	6	40	6	3,86	6,67	50	8	3,70	6,3	20	7	0,20	2,86	15	7	NIL	2,14
		APR-MAY	20,55	17,75	0,67	20,55	0,685	6	40	4	7,815	10,00	50	3	13,98	16,7	20	3	3,98	6,67	15	3	2,32	5,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	6	40	3	10,89	13,33	50	3	14,23	16,7	20	3	3,98	6,67	15	3	2,56	5,00
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	6	40	5	4,65	8,00	50	5	6,65	10,0	20	4	4,23	5,00	15	5	NIL	3,00
	3-8 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	10,5	70	8	5,63	8,75	100	8	9,38	12,5	25	7	1,35	3,57	15	7	NIL	2,14
		APR-MAY	20,55	17,75	0,67	20,55	0,685	10,5	70	4	14,19	17,50	100	4	21,69	25,0	25	3	0,27	8,33	15	3	0,82	5,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	10,5	70	3	19,39	23,33	100	3	29,39	33,3	25	3	4,15	8,33	15	3	1,06	5,00
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	10,5	70	5	9,75	14,00	100	5	15,75	20,0	25	5	4,39	5,00	15	5	NIL	3,00
	MATURE	JAN-MAR	54,1	9,9	0,75	54,1	1,80	15	100	8	8,82	12,50	120	8	11,32	15,0	25	7	0,75	3,57	15	7	NIL	2,14
		APR-MAY	20,55	17,75	0,67	20,55	0,685	15	100	4	20,57	25,00	120	4	25,57	30,0	25	3	NIL	8,33	15	3	NIL	5,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	15	100	3	27,89	33,33	120	3	34,56	40,0	25	3	2,65	8,33	15	3	NIL	5,00
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	15	100	5	14,85	20,00	120	5	18,85	24,0	25	5	2,89	5,00	15	5	NIL	3,00
*** MEDIUM - MEDIUM LOW with Water Tanks & Controlled Irrigation	1-2 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	6	40	5	5,00	8,00	40	5	5,00	8,0	15	7	NIL	2,14	10	7	NIL	1,43
		APR-MAY	20,55	17,75	0,67	20,55	0,685	6	40	3	10,65	13,33	40	3	10,648	13,3	15	4	NIL	3,75	10	4	NIL	2,50
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	6	40	3	10,89	13,33	40	3	10,89	13,3	15	2	1,57	7,50	10	3	0,89	3,33
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	6	40	4	6,35	10,00	40	4	6,35	10,0	15	5	4,06	3,00	10	5	NIL	2,00
	3-8 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	9	60	8	4,57	7,50	60	6	6,70	10,0	20	7	NIL	2,86	10	7	NIL	1,43
		APR-MAY	20,55	17,75	0,67	20,55	0,685	9	60	4	12,07	15,00	60	3	16,32	20,0	20	4	NIL	5,00	10	4	NIL	2,50
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	9	60	3	16,56	20,00	60	3	16,56	20,0	20	3	2,07	6,67	10	3	NIL	3,33
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	9	60	5	8,05	12,00	60	4	10,6	15,0	20	5	3,23	4,00	10	5	NIL	2,00
	MATURE	JAN-MAR	54,1	9,9	0,75	54,1	1,80	12	80	8	6,70	10,00	80	6	9,53	13,3	20	7	0,05	2,86	10	7	NIL	1,43
		APR-MAY	20,55	17,75	0,67	20,55	0,685	12	80	4	16,32	20,00	80	3	21,98	26,7	20	4	NIL	5,00	10	4	NIL	2,50
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	12	80	3	22,23	26,67	80	3	22,23	26,7	20	3	NIL	6,67	10	3	NIL	3,33
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	12	80	5	11,45	16,00	80	4	14,85	20,0	20	5	2,23	4,00	10	5	NIL	2,00
** MEDIUM LOW - - LOW with Water Tanks & Controlled Irrigation	1-2 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	4,5	30	8	1,38	3,75	NIL	NIL	NIL	NIL	12	8	NIL	1,50	10	10	NIL	1,00
		APR-MAY	20,55	17,75	0,67	20,55	0,69	4,5	30	4	5,69	7,50	NIL	NIL	NIL	NIL	12	4	NIL	3,00	10	5	NIL	2,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	4,5	30	4	5,94	7,50	NIL	NIL	NIL	NIL	12	4	NIL	3,00	10	4	0,94	2,50
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	4,5	30	5	2,95	6,00	NIL	NIL	NIL	NIL	12	7	1,44	1,71	10	7	NIL	1,43
	3-8 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	9	60	8	4,57	7,50	NIL	NIL	NIL	NIL	25	7	NIL	3,57	10	10	NIL	1,00
		APR-MAY	20,55	17,75	0,67	20,55	0,69	9	60	4	12,07	15,00	NIL	NIL	NIL	NIL	25	4	NIL	6,25	10	5	NIL	2,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	9	60	4	12,31	15,00	NIL	NIL	NIL	NIL	25	4	3,32	6,25	10	4	NIL	2,50
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	9	60	5	8,05	12,00	NIL	NIL	NIL	NIL	25	7	3,56	3,57	10	7	NIL	1,43
	MATURE	JAN-MAR	54,1	9,9	0,75	54,1	1,80	10,5	70	7	6,70	10,00	NIL	NIL	NIL	NIL	25	7	0,14	3,57	10	10	NIL	1,00
		APR-MAY	20,55	17,75	0,67	20,55	0,69	10,5	70	4	14,19	17,50	NIL	NIL	NIL	NIL	25	4	0,27	6,25	10	5	NIL	2,00
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	10,5	70	4	14,44	17,50	NIL	NIL	NIL	NIL	25	4	2,94	6,25	10	4	NIL	2,50
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	10,5	70	5	9,75	14,00	NIL	NIL	NIL	NIL	25	7	3,19	3,57	10	7	NIL	1,43
* LOW - MINIMUM with Water Tanks & Controlled Irrigation	1-2 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	7,5	50	14	1,23	3,57	NIL	NIL	NIL	NIL	12	20	NIL	0,60	12	20	NIL	0,60
		APR-MAY	20,55	17,75	0,67	20,55	0,69	7,5	50	10	3,57	5,00	NIL	NIL	NIL	NIL	12	12	NIL	1,00	12	10	NIL	1,20
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	7,5	50	7	5,63	7,14	NIL	NIL	NIL	NIL	12	7	NIL	1,71	12	7	NIL	1,71
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	7,5	50	12	1,39	4,17	NIL	NIL	NIL	NIL	12	12	0,20	1,00	12	12	NIL	1,00
	3-8 YRS	JAN-MAR	54,1	9,9	0,75	54,1	1,80	15	100	20	2,45	5,00	NIL	NIL	NIL	NIL	25	20	NIL	1,25	12	20	NIL	0,60
		APR-MAY	20,55	17,75	0,67	20,55	0,69	15	100	10	7,82	10,00	NIL	NIL	NIL	NIL	25	12	NIL	2,08	12	10	NIL	1,20
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	15	100	7	11,70	14,29	NIL	NIL	NIL	NIL	25	10	NIL	2,50	12	7	NIL	1,71
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	15	100	12	4,93	8,33	NIL	NIL	NIL	NIL	25	12	0,56	2,08	12	12	NIL	1,00
	MATURE	JAN-MAR	54,1	9,9	0,75	54,1	1,80	15	100	20	2,45	5,00	NIL	NIL	NIL	NIL	25	20	NIL	1,25	12	20	NIL	0,60
		APR-MAY	20,55	17,75	0,67	20,55	0,69	15	100	10	7,82	10,00	NIL	NIL	NIL	NIL	25	12	NIL	2,08	12	10	NIL	1,20
		JUN-OCT	13,2	24,65	0,57	13,2	0,44	15	100	7	11,70	14,29	NIL	NIL	NIL	NIL	25	10	0,15	2,50	12	7	NIL	1,71
		NOV-DEC	64,5	12,68	0,67	64,5	2,15	15	100	12	4,93	8,33	NIL	NIL	NIL	NIL	25	12	0,56	2,08	12	12	NIL	1,00

DIMITRA@HRA DATA

a/a	BOTANICAL NAME	COMMON NAME (ENGLISH)	COMMON NAME (GREEK)	Drought Tolerant / Dry Seasons	SALINE TOLERANT	Species /Additional Noticable Info (ie Hazards, Endagered Species, Other Tolerances, Environmental Benefits)
			Palms			
1	Phoenix canariensis, Palmaceae	Date palm/ Canary Island date palm / pineapple palm	**Κανάριος φοίνικας**	**High Temperatures / Drought**		Flood Tolerant
2	Phoenix theophrasti	Cretan date palm	**Κρητικός φοίνικας**	**Drought and heat tolerant**		Wind Tolerant
3	Washingtonia robusta, Palmaceae	Mexican fan palm or Mexican washingtonia	**Ισχυρή πιτσάρδια**	**Drought**		
			Trees			
4	Acacia arabica	Babul, koa	**Ακανθώδης ακακία**	**Drought**		
5	Acacia cyanophylla, Leguminosae	Coojong, golden wreath wattle, orange wattle, blue-leafed wattle, Western Australian golden watti	**Κυανόφυλλη ακακία**	**Drought**		
6	Acacia farnesiana	Perfume wattle	**Γαζία**	**Drought**		
7	Albizia julibrissin, Leguminosae	Persian silk tree, pink silk tree	**Ακακία Κωνσταντινουπόλεως**	**Drought**		**HAZARDS * the United States National Park Service considers it an invasive species CABI**
8	Albizia lebbeck	Tibet - Shirish tree	**Αλβιζία**	**Dry Seasons**		**HAZARDS * It is considered to be invasive in some areas CABI**
9	Arbutus unedo, Ericaceae	Strawberry Tree	**Κουμαριά**	**Drought**		Tolerates atmospheric pollution. Tolerates maritime exposure.
10	Azaderachta indica	neem, Indian lilac, mahogany, azadira d'Inde, nim, Indischer Zedrach	**Ινδική πασχαλιά**	**Drought**		
11	Cassia fistula	Golden shower	**Πικρή κάσσια**	**Dry Seasons**		Tolerates light brief frost
12	Celtis occidentalis	nettletree, sugarberry, beaverwood, northern hackberry, and American hackberry	**Μελικοκιά**	**Drought**		Considered an indicator of high pH (7.2) soils.
13	Cercis siliquastrum, Leguminosae	Judas tree or Judas-tree	**Κέρκις**	**Drought**		It can fix Nitrogen. It is noted for attracting wildlife.
14	Delonix regia	Flamboyant tree	**Φλογόδεντρο**	**Dry Seasons**		
15	Elaeagnus angustifolia, Elaeagnaceae	Oleaster, Russian olive	**Τζιτζιφιά**	**Drought**		Tolerates salty conditions.
16	Eucalyptus globulus, Myrtaceae	Tasmanian bluegum, southern blue-gum or blue gum	**Ευκάλυπτος ο σφαιρικός**	**Drought**		**HAZARDS * the United States National Park Service consider it an invasive species CABI / Erosion control: Its wide-spreading and dense**
17	Koelreuteria paniculata	golden rain tree	**Κοιλρευτερία η ανθηλοφόρος**	**Drought**		**HAZARDS* Some US States consider it an invasive species**
18	Laurus nobilis, Lauraceae	Bay Tree, Sweet bay, Grecian Laurel, True Laurel	**Δάφνη**	**Drought**		
19	Melia azedarach, Meliaceae	Tulip Cedar; Cedar, White; Persian Lilac; Karabil; Chinaberry Tree; China Berry; White Cedar; Cape Lilac; Cedar, Tulip	**Αγριοπασχαλιά**	**Drought**	Dry Seasons	**HAZARDS* Some US States consider it an invasive species CABI. All parts of the plant contain toxins. / ENVIRONMENTAL USE * They are planted for re-afforestation in their native areas.**
20	Myrtus communis, Myrtaceae	myrtle	**Μυρτιά**	**Drought**	Drought	
21	Olea europaea, Oleaceae	Olive, African olive, European olive	**Ελιά**	**Drought**	Drought	Tolerates conditions of considerable salinity and alkalinity
22	Parkinsonia aculeata	Jerusalem thorn	**Παρκινσόνια**	**Drought**	Drought	
23	Peltophorum inerme	Yellow flame tree / Peltophorum pterocarpum	**Πελτοφόρος**	**Dry Seasons**	Drought	
24	Picea pungens 'Bacheri'	Colorado spruce		**Drought**		Tolerate: Air Pollution
25	Plumeria obtusa	White Frangipani	**Πλουμέρια**	**Dry Seasons**	Drought	
26	Pongamia pinnata	Indian beech	**Ινδική οξιά**	**Dry Seasons**	Drought	**Threatened species / HAZARDS*The seeds are poisonous / ENVIONMENTAL* IT CAN FIX NITROGEN**
27	Prosopis cinerea	Ghaf	**Προσωπίδα**	**Drought**	Drought Tolerant	
28	Quercus sp., Fagaceae	Oak	**Δρυς**	**Drought**	Drought Tolerant	**HAZARDS * Considered invasive CABI**
29	Schinus terebinthifolius	Brazilian pepper tree	**Βραζιλιάνικη πιπεριά**	**Drought**	Dry Seasons	**HAZATDS * Florida Noxious Weeds List meaning possession and cultivation of this shrub/tree are illegal.**
30	Tabebuia argentea	Yellow trumpet tree	**Ταβεβουία**	**Drought**	Dry Seasons	**HAZARDS * Considered invasive exceptionally CABI/ TOLERANCES Durable in contact with salt water.**
31	Ziziphus spina christi	Arabic (sidr,siddir,nubak,nabdag,nabbak,nabak,kurna); English (jujube,Christ thorn); French (epine du Christ)	**Ακανθώδης τζιτζιφιά του Χριστού**	**Drought**	Salinity Drought Strong wind	Can be found in desert areas with even 100 mm rainfall annually.
			Shrubs			

32	Aerva javanica	Al ara		**Drought**		
33	Agave americana, Agavaceae	American agave, American aloe, century plant	**Αθάνατος**	**Drought**		
34	Aloe vera, Aloaceae	Aloe	**Αλόη η γνήσια**	**Drought**		
35	Atriplex canescens	Four wing salt bush	**Ατρίπλεξ**	**Drought**		Very tolerant of maritime exposure, though they dislike wet climates. Requires a well-drained soil
36	Atriplex halimus	Mediterranean salt bush, Tree purslane	**Αλιμιά**	**Drought**		can be used as a hedge in maritime areas.
37	Bougainvillea spectabilis	Bougainvillea	**Άγρια μπουκαμβίλια**	**Dry Seasons**		Requires a well-drained soil
38	Caesalpinia pulcherrima	Dwarf ponciana	**Κόκκινο πουλί του παραδείσου**	**Drought**		Requires a well-drained soil
39	Calligonum comosum	Abal		**Drought**		
40	Carissa grandiflora (macrocarpa)	Natal Plum	**Καρίσα η μεγανθής**	**Drought**		Tolerant of windy positions
41	Chamaerops humilis, Palmaceae	European fan palm	**Χαμαίρωπας**	**Drought**		
42	Clerodendrum inerme	Wild jasmine	**Αγριογιασεμί**	**Drought**	Drought	
43	Cyperus alternifolius	Umbrella Plant	**Κύπειρος ο εναλλασσόφυλλος**	**Dry Seasons**	Drought	Semi aquatic
44	Cyperus conglomeratus	Rash	**Κύπειρος ο στρογγυλός**	**Dry Seasons**	Dry Seasons	**HAZARDS * invasive species in some areas CABI**
45	Dodonea viscosa	Hopseed bush, Hop Bush		**Dry Seasons**	Drought	Rocky or sandy and well-drained soils.can also handle some frosts.
46	Jatropha integerrima	Jatropha, Spicy jatropha	**Γιάτροφα**	**Drought**	Drought	Dry Soils, Well-Drained Soils
47	Laurus nobilis, Lauraceae	bay laurel	**Δάφνη**	**Drought**	Dry Seasons	
48	Lawsonia inermis	Henna plant		**Drought**	Drought	
49	Leptadenia pyrotechnica	Markh		**Drought**	Drought	
50	Leucophyllum frutescens	Texas ranger	**Λευκόφυλλο**	**Drought**	Drought	dry to medium, well-drained soils
51	Nerium oleander, Apocynaceae	oleander	**Πικροδάφνη**	**Drought**	Drought	
52	Opuntia ficus-indica, Cactaceae	prickly-pear	**Φραγκοσυκιά**	**Drought**	Drought	
53	Pittosporum tobira, Pittosporaceae	Japanese pittosporum	**Αγγελικούλα**	**Drought**	Drought	
54	Rosmarinus officinalis, Labiatea	rosemary	**Ροσμαρίνος**	**Drought**	Drought	
55	Ruellia brittoniana	Mexican petunia	**Ρουελία**	**Drought**	Drought	**HAZARDS * becomes very aggressive with access to abundant moisture**
56	Salvadora persica	Tooth brush bush		**Drought**	Drought	
57	Vitex angus-castus	lilac chastetree	**Λυγαριά**	**Drought**	Drought	
58	Yucca aloifolia, Liliaceae		**Γιούκα**	**Drought**	Drought	
			Ground Covers + Grasses			
59	Adenium obesum	Desert rose	**Αντένιουμ**	**Drought**	Drought	
60	Aerva javanica	Desert cotton		**Drought**	Drought	
61	Agave americana	Century plant	**Αγάβη**	**Drought**	Drought	
62	Agave angustifolia marginata	Carribean agave	**Αγάβη**	**Drought**	Drought	
63	Agave desmettiana	Dwarf century plant	**Αγάβη**	**Drought**	Drought	
64	Aloe vera	Burn plant	**Αλόη**	**Drought**		
65	Bougainvillea nana	Dwarf Bougainvillea	**Βουκαμβίλια Νάνα**	**Dry Seasons**		
66	Carissa grandiflora (Green carpet)	Dwarf Natal Plum	**Καρίσα η μεγανθής Φυτά**	**Drought**		**HAZARDS * All parts of Natal plum are poisonous except for the ripe fruits.**
67	Crassula argentea	jade plant, lucky plant, money plant or money tree	**Κράσουλα**	**Drought**		
68	Euphorbia milii	crown of thorns, Christ plant, or Christ thorn, called Corona de Cristo in Latin America (coroa-de-cristo in Brazil)	**Αγκάθι του Χριστού**	**Drought**		**HAZARDS * The sap is moderately poisonous, and causes irritation on contact with skin or eyes.**

69	Lampranthus spectabilis	Trailing ice plant	**Λάμπρανθος**	**Drought**		100-150 species
70	Pennisetum divisum	Thymum	**Πεννίζετο**	**Drought**	Drought	
71	Pennisetum rubrum	Red fountain grass	**Πεννίζετο**	**Drought**		
72	Pennisetum setaceum	Fountain grass	**Πεννίζετο**	**Drought**		**HAZARDS * considered invasive EU List** / **Widely used in municipal plantings**
73	Portulaca grandiflora	Moss rose	**Νυχάκι**	**Drought**		
74	Portulacaria afra	Small leaf jade	**Υπομονή**	**Drought**		
75	Ruellia brittoniana	Wild petunia	**Ρουελία**	**Dry Seasons**	Drought	
76	Sansevieria trifasciata	Mother-in-laws tongue	**Σανσεβιέρια**	**Dry Seasons**	Drought	
77	Sesuvium portulacastrum	Sea purslane		**Drought**	Drought	cultivated as an ornamental and as ground cover to prevent erosion in dune vegetation
78	Wedelia trilobata	Creeping Daisy		**Drought**	Drought	
79	Yucca gloriosa	Spanish dagger	**Γιούκα**	**Drought**	Dry Seasons	

DIMITRA@HRA DATA

a/a	Botanical Name / Height	COMMON NAME (ENGLISH)	COMMON NAME (GREEK)	Fire resistant & Drought tolerant	Species /Additional Noticable Info (ie Hazards, Endagered Species, Other Tolerances, Environmental Benefits)
			Trees		
1	Acer circinatum	Norway Maple, Harlequin Maple	**Σφένδαμος**	**Fire resistant**	**Most maples are bad companion plants, inhibiting the growth of nearby plants**
2	Aesculus hippocastanum	Buckeye and horse chestnut	**Αγριοκαστανιά**	**Fire resistant/Semi Drought tolerant**	Deseasing
3	Alnus rubra tenuifolia	red alder		**Fire resistant**	**ENVIRONMENTAL *Bacteria on the roots fix atmospheric nitrogen.*Landscape Uses: Erosion control..**
4	Betula species	Birch	**Σημύδα**	**Fire resistant/Drought tolerant**	129 species
5	Catalpa speciosa	northern catalpa, hardy catalpa, western catalpa, cigar tree, catawba-tree, or bois chavanon	**Κατάλπη**	**Fire resistant/Drought tolerant**	**Tolerate: Clay Soil, Air Pollution**
6	Ceratonia siliqua, Leguminosae	carob, St John's bread, Hebrew tree	**Χαρουπιά**	**Fire resistant/Drought tolerant**	**CONDITIONS *Young trees basic physiological functions under high salt conditions (40 mmol NaCl/l)**
7	Cercis canadensis	eastern redbud	**Ανατολική Κουτσουπιά**	**Fire resistant/Drought tolerant**	**Tolerate: Clay Soil**
8	Cornus florida, nuttalli	mountain dogwood	**Κρανιά**	**Fire resistant/Semi Drought tolerant**	**Tolerate: Clay Soil**
9	Crataegus species	hawthorn, thornapple, May-tree	**Κράταιγος**	**Fire resistant/Drought tolerant**	Species could vary between 150 and 1200, Tolerate: Clay Soil, Dry Soil
11	Fagus species	Beech	**Οξιά**	**Fire resistant/Drought tolerant**	75 species
12	Ficus elastica, Moraceae	rubber fig, rubber bush, rubber tree, rubber plant, or Indian rubber bush, Indian rubber tree	**Φίκος**	**Fire resistant**	
13	Fraxinus species	English name ash, is a genus of flowering plants in the olive and lilac family, Oleaceae	**Φράξινος**	**Fire resistant/Drought tolerant**	45–65 species
14	Ginkgo biloba	ginkgo or gingko, maidenhair tree	**Γκίγκο**	**Fire resistant/Drought tolerant**	Only species, all others being extinct.
15	Gleditsia triacanthos	honey locust, thorny locust,	**Γλεδίτσια η τριάκανθος**	**Fire resistant/Drought tolerant**	**HAZARDS * Invasive EU List /ENVIRONMENTAL USE * It is used in soil reclamation projects, as a barrier hedge, and is also sometimes grown as an ornamental**
16	Gymnocladus dioicus	Kentucky coffeetree	**Γυμνόκλαδος ο δίοικος**	**Fire resistant/Drought tolerant**	
17	Juglans	Walnut trees	**Καρυά**	**Fire resistant/Drought tolerant**	
18	Liquidambar styraciflua	American storax, hazel pine, bilsted, redgum, satin-walnut, star-leaved gum, alligatorwood, or simply sweetgum	**Υγράμβαρη η στυρακοφόρος**	**Fire resistant**	
19	Malus species	Apples, crabapples, crab apples or wild apples	**Μηλέα**	**Fire resistant/Semi Drought tolerant**	30–55 species. Tolerate: Air Pollution
20	Populus species	poplar, aspen, and cottonwood	**Λεύκα**	**Fire resistant/Drought tolerant**	25–35 species Tolerate: Air Pollution
21	Prunus cherry	plums, cherries, peaches, nectarines, apricots, and almonds	**Κερασιά**	**Fire resistant**	**Tolerates heat and humidity**
22	Quercus agrifolia, rubra, palustria, garryana	Oak Tree	**Δρυς**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Air Pollution**
23	Robinia pseudoacacia	black locust, false acacia	**Ροβίνια η ψευδοακακία**	**Fire resistant/Drought tolerant**	**HAZARDS * Invasive EU List /** Tolerate: Dry Soil, Air Pollution Fixes Nitrogen
24	Salix species	Willow	**Ιτιά**	**Fire resistant/Semi Drought tolerant**	aprox. 350 species Avoid dry soils.
25	Sorbus aucuparia	rowan and mountain-ash	**Αγριοσορβιά**	**Fire resistant**	
			Shrubs		
26	Amelanchier alnifolia	saskatoon, Pacific serviceberry, western serviceberry, alder-leaf shadbush, dwarf shadbush, chuckley pear, or western juneberr	**Αμελάγχιο το κληθρόφυλλο**	**Fire resistant**	**Tolerant of a somewhat wide range of soils.**

27	Caryopteris x clandonensis	Heavenly Blue	**Καρυόπτερη**	**Fire resistant/Drought tolerant**	
28	Ceanothus thyrsiflorus	blueblossom or blue blossom ceanothus	**Κεάνοθος**	**Fire resistant/Drought tolerant**	
29	Cistus	rockrose	**Κίστος**	**Fire resistant**	
30	Cotoneaster species	Willow-leaf Cotoneaster, Orange (Franchet) Cotoneaster	**Κυδωνίαστρο**	**Fire resistant**	between 70 and 300 different species, Tolerate: Rabbit, Erosion, Air Pollution
31	Euonymus alatus	winged spindle, winged euonymus or burning bush,	**Ευώνυμο**	**Fire resistant/Drought tolerant**	**HAZARDS * considered invasive CABI**
32	Fremontodendron californium	California flannelbush, California fremontia, and flannel bush	**Φρεμοντόδενδρο**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**
33	Fuchsia Group	Fuchsia	**Φούξια**	**Fire resistant**	**Hardiness: Fully hardy to frost tender**
34	Gaultheria shallon	salal, shallon, or simply gaultheria		**Fire resistant/Semi Drought tolerant**	
35	Holodiscus discolour	ocean spray or oceanspray, creambush, or ironwood		**Fire resistant/Drought tolerant**	
36	Lagerstroemia indica	crepe myrtle, crepeflower	**Λαγερστροιμία η ινδική**	**Fire resistant/Drought tolerant**	
37	Mahonia		**Μαόνια**	**Fire resistant/Drought tolerant**	
38	Pachystima myrsinites	Oregon boxleaf, Oregon boxwood, mountain lover, box, or hedge, false box, myrtle box leaf;		**Fire resistant/Drought tolerant**	
39	Philadelphus species	mock-orange	**Φιλάδελφος**	**Fire resistant/Drought tolerant**	about 60 species
40	Pyracantha species	firethorn or pyracantha	**Πυράκανθος**	**Fire resistant/Drought tolerant**	7 are not invasive and are most commonly used
41	Ribes species	Currants (blackcurrant, redcurrant, white currant), the gooseberry	**Ριβήσιο**	**Fire resistant/Drought tolerant**	about 150 species
42	Rhus species	Sumac	**Σουμάκι**	**Fire resistant/Drought tolerant**	35 species
43	Spiraea bumalda	Japanese spirea	**Ιαπωνική σπειραία**	**Fire resistant/Drought tolerant**	
44	Symphoricarpos albus	common snowberry	**Συμφορίκαρπος**	**Fire resistant/Drought tolerant**	
45	Syringa vulgaris, spidouglasii	lilac or common lilac	**Πασχαλιά**	**Fire resistant/Drought tolerant**	
46	Yucca species	Yucca	**Γιούκα**	**Fire resistant/Drought tolerant**	49 species and 24 subspecies
			Ground Cover		
47	Achillea species	Yarrow(Achillea 'Moonshine')	**Αχίλλεια**	**Fire resistant/Drought tolerant**	1000 species / suitable for xeriscaping
48	Ajuga reptans	bugle, blue bugle, bugleherb, bugleweed, carpetweed, carpet bugleweed, and common bugle,	**Λιβανόχορτο**	**Fire resistant/Semi Drought tolerant**	**HAZARDS * considered invasive CABI**
49	Antennaria	rosy pussytoes	**Αντεναρία**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**
50	Aquilegia	columbine	**Κολομπίνα**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil**
51	Arctostaphylos uva-ursi	Bearberry Manzanita, Mealberry	**Αρκουδοστάφυλο**	**Fire resistant/Drought tolerant**	**ENVIRONMENTAL * It is useful for controlling erosion.**
52	Armeria maritima	sea thrift	**Χαλαβόχορτο**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**
53	Aubrieta deltoidea	lilacbush, purple rock cress and rainbow rock cress	**Αουβριετία**	**Fire resistant/Drought tolerant**	
54	Aurinia saxatilis	basket-of-gold	**Αουρίνια η βραχόφιλη**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**
55	Ceanothus prostratus	prostrate ceanothus, pinemat and mahala mat	**Κεάνοθος**	**Fire resistant/Drought tolerant**	
56	Cerastium tomentosum	Snow-in-Summer	**Κεράστιο το χνουδωτό**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**
57	Coreopsis	threadleaf coreopsis	**Κορέοψη**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil**

58	Delosperma nubigenum	Yellow Ice Plant	**Δηλόσπερμα**	**Fire resistant/Drought tolerant**	
59	Dianthus species	carnation, pink and sweet william	**Δίανθος**	**Fire resistant/Drought tolerant**	about 300 species
60	Echinacea purpurea	purple coneflower	**Πορφυρή εχινάκεια**	**Fire resistant/Drought tolerant**	**Tolerate: Clay Soil, Dry Soil, Shallow-Rocky Soil**
61	Epilobium angustifolium	Willow Herb	**Επιλόβιο το στενόφυλλο**	**Fire resistant/Semi Drought tolerant**	**Tolerate: Clay Soil, Dry Soil**
62	Fragaria species	Strawberries	**Φραγκάρια**	**Fire resistant/Drought tolerant**	20 different Fragaria species worldwide
63	Gaillardia varieties	blanket flower	**Γκαϊλάρδια**	**Fire resistant/Drought tolerant**	
64	Geranium species	Geranium	**Γεράνιο**	**Fire resistant/Drought tolerant**	Approx. 1616 plants
65	Helianthemum	rock rose	**Ηλιάνθεμο**	**Fire resistant/Drought tolerant**	
66	Hemerocallis	daylily	**Ημεροκαλλίς**	**Fire resistant/Drought tolerant**	**Tolerate: Erosion, Air Pollution**
67	Iris - bearded / iris germanica	iris	**Ιρις**	**Fire resistant/Drought tolerant**	
68	Kniphofia uvaria	red-hot poker	**Κνιφόφια**	**Fire resistant/Drought tolerant**	
69	Lavandula angustifolia	English lavender	**Λεβάντα**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil, Air Pollution**
70	Lupinus	lupine	**Λούπινος**	**Fire resistant**	
71	Oenothera species	Oenothera	**Οινοθήρας**	**Fire resistant/Drought tolerant**	Approx. 994 plants
72	Papaver orientale	oriental poppy	**Παπαρούνα**	**Fire resistant**	
73	Penstemon	beardtongue	**Πενστήμων**	**Fire resistant**	
74	Perovskia atriplicifolia	Russian sage	**Ρωσικό φασκόμηλο**	**Fire resistant/Drought tolerant**	**Tolerate: Clay Soil, Dry Soil, Air Pollution**
75	Phlox subulata	moss phlox	**Φλοξ**	**Fire resistant/Drought tolerant**	**Tolerate: Erosion, Air Pollution**
76	Ratibida columnifera	Mexican hat plant		**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil,**
77	Salvia species	sage of the diviners, ska maría pastora, seer's sage, yerba de la pastora or simply salvia	**Ιερή φασκομηλιά**	**Fire resistant/Drought tolerant**	Approx. 2559 plants
78	Sedum species	Stonecrops	**Σέδο**	**Fire resistant/Drought tolerant**	55 European species, 600 species totally /Plants tolerate shade, loamy or rocky soils, drought and alkaline pH.
79	Sempervivums	houseleeks	**Σεμπερβίβο**	**Fire resistant/Drought tolerant**	**Tolerate: Erosion, Air Pollution, Dry Soil, Shallow-Rocky Soil**
80	Stachys byzantina	lambs' ears	**Βυζαντινός στάχυς**	**Fire resistant/Drought tolerant**	**Tolerate: Dry Soil, Shallow-Rocky Soil, Air Pollution**
81	Thymus praecox	thyme	**Θύμος**	**Fire resistant/Drought tolerant**	**Tolerate: Erosion, Air Pollution, Dry Soil, Shallow-Rocky Soil**
82	Veronica species	speedwell, bird's eye, and gypsyweed.	**Βερονίκη**	**Fire resistant/Drought tolerant**	Approx. 500 Shrubs

DIMITRA@HRA DATA

a/a	BOTANICAL NAME	COMMON NAME (ENGLISH)	COMMON NAME (GREEK)	Drought Tolerant / Dry Seasons	SPECIES	Noticable Info (Hazards OR Benefits)	Minimum No of Species
Trees							
1	Betula species	Birch	**Σημύδα**	**Fire resistant/Drought tolerant**	66 - 129 species	Birches with white coloured bark, such as silver birch, contain betulinic acid and its precursor, betulin. As well as giving the bark its colour, these are thought to protect the tree against extremes of temperature and parasitic infections. Both compounds have medicinal effects, with betulinic acid generally the more active.	66
2	Crataegus species	hawthorn, thornapple, May-tree	**Κράταιγος**	**Fire resistant/Drought tolerant**	Species could vary between 150 and 1200, Tolerate: Clay Soil, Dry Soil	This genus, as a whole, is very easily grown and contains many species with delicious fruits, though virtually none of them has ever been bred for their fruit. Because they hybridize freely, there is an excellent potential to produce superior fruiting cultivars and, with the wide diversity in size of the plants ranging from small shrubs to quite large trees, there should be species suitable for small gardens as well as large sites.	150
3	Fagus species	Beech	**Οξιά**	**Fire resistant/Drought tolerant**	75 species	The European beech Fagus sylvatica favours a humid atmosphere and well-drained soils which its roots can easily penetrate. On favourable sites, beech is widely distributed as it out-competes other tree species due to its excellent tolerance to shade.	75
4	Fraxinus species	English name ash, is a genus of flowering plants in the olive and lilac family, Oleaceae	**Φράξινος**	**Fire resistant/Drought tolerant**	45–65 species	The Red List of Fraxinus reveals that the majority of Fraxinus species (79%) are not threatened with extinction in the wild. However, **11 species are at high risk of being lost in the near future,** with over 50% of these threatened species experiencing rapid population decline due to the devastating emerald ash borer (EAB) insect, invasive to North America.	45
5	Malus species	Apples, crabapples, crab apples or wild apples	**Μηλέα**	**Fire resistant/Semi Drought tolerant**	30–55 species. Tolerate: Air Pollution	CABI DESCRIPTION : Host Plant	30
6	Populus species	poplar, aspen, and cottonwood	**Λεύκα**	**Fire resistant/Drought tolerant**	25–35 species Tolerate: Air Pollution	Usually in damp soils or in river beds. Sometimes planted to stabilise river banks, but they may in fact cause erosion by creating dense thickets which divert flows against the opposite bank and may spread downstream away from the planting site. At this point it appears that not all poplars are invasive but given this potential for hybridisation it would	25
7	Salix species	Willow	**Ιτιά**	**Fire resistant/Semi Drought tolerant**	aprox. 350 species Avoid dry soils.	River beds and banks. A moist seed bed such as wet sand is needed for seeds to germinate and become established. In some cases roadside ditches or swamps may also be colonised. Their impact on rivers is substantial. They trap sediment, building up the river bed and filling in the waterholes needed by aquatic animals. Their	350
Shrubs							
8	Cotoneaster species	Willow-leaf Cotoneaster, Orange (Franchet) Cotoneaster	**Κυδωνίαστρο**	**Fire resistant**	between 70 and 300 different species, Tolerate: Rabbit, Erosion, Air Pollution	Once cotoneaster is established, it can dominate areas – outcompeting native flora and creating dense thickets. When plants spread into the wild, they are particularly problematic on limestone cliffs, pavements and screes, through outcompeting rare native plant species. They can also form an extensive root system which is difficult to remove. Invasive	70
9	Philadelphus species	mock-orange	**Φιλάδελφος**	**Fire resistant/Drought tolerant**	about 60 species	It is a tough drought-resistant species from southern Europe and the Caucasus, cultivated for centuries and the source of many fine garden varieties.	60
10	Pyracantha species	firethorn or pyracantha	**Πυράκανθος**	**Fire resistant/Drought tolerant**	7 are not invasive and are most commonly used	Some considered invasive in California	7

11	Ribes species	Currants (blackcurrant, redcurrant, white currant), the gooseberry	**Ριβήσιο**	**Fire resistant/Drought tolerant**	about 150 species	Because all Ribes species are alternative hosts of the destructive blister rust fungus, which also attacks white pines, there are local prohibitions to growing Ribes near any white pine plantations.	150
12	Rhus species	Sumac	**Σουμάκι**	**Fire resistant/Drought tolerant**	35 species	**Tolerates Drought, Erosion, Dry Soil, Shallow-Rocky Soil. Best when massed for stabilizing embankments or for hard-to-cover areas with poorer soils or for naturalizing in wild areas**	35
13	Yucca species Shrubs	Yucca	**Γιούκα**	**Fire resistant/Drought tolerant**	49 species and 24 subspecies	**Tolerates Erosion, Air Pollution. Yucca filamentosa: Tolerant of poor, sandy soils. Surprising tolerance for some part shade. Yucca gloriosa Tolerant of poor, dry, sandy soils.**	49
14	Achillea species	Yarrow(Achillea 'Moonshine')	**Αχίλλεια**	**Fire resistant/Drought tolerant**	1000 species / suitable for xeriscaping	**Tolerates Dry Soil, Shallow-Rocky Soil. Tolerant of summer heat and humidity.**	1000
Ground Cover							
55	Dianthus species	carnation, pink and sweet william	**Δίανθος**	**Fire resistant/Drought tolerant**	about 300 species	Dianthus species have been extensively bred and hybridised to produce many thousands of cultivars for garden use and floristry, in all shades of white, pink, yellow and red, with a huge variety of flower shapes and markings.	300
16	Fragaria species	Strawberries	**Φραγκάρια**	**Fire resistant/Drought tolerant**	20 different Fragaria species worldwide	Fragaria Vesca is considered invasive. it invades natural or semi-natural environments with a relatively high density but it does not dominate or co-dominate vegetation.	20
17	Lampranthus Species	Trailing ice plant	**Λάμπρανθος**	**Drought**	100-150 species	Size and shape varies from round bushes up to 700mm to low-creeping ground covers. Flowers, in shades of pink, purple, orange and yellow, have a glistening sheen to the petals. Spring-flowering vygies are a must for dry gardens. Provided they have good drainage, vygies will thrive, with the bushes becoming entirely covered in flowers.	100
18	Sedum species	Stonecrops	**Σέδο**	**Fire resistant/Drought tolerant**	55 European species, 600 species totally /Plants tolerate shade, loamy or rocky soils, drought and alkaline pH.	Many Sedum species originate from the northern hemisphere and around the Mediterranean in particular. Sedum is also very adaptable: due to its capacity to adapt its metabolic system in periods of drought, it is able to survive in extremely dry conditions where other types of plants would die. And furthermore, Sedum recovers remarkably quickly as soon as water becomes available again.	600
19	Veronica species	speedwell, bird's eye, and gypsyweed.	**Βερονίκη**	**Fire resistant/Drought tolerant**	Approx. 500 Shrubs	**Defined as Threatened Species in New Zealand. At species level, the project targets the critically endangered flagship plant of Mt. Oiti, the Veronica oetaea, through the in situ enhancement of the species population and ex situ seed banking.**	500
20	Oenothera species	Oenothera	**Οινοθήρας**	**Fire resistant/Drought tolerant**	Approx. 994 plants	This plant can be weedy or invasive according to the authoritative sources. (USDA)	994
21	Salvia species	sage of the diviners, ska maría pastora, seer's sage, yerba de la pastora or simply salvia	**Ιερή φασκομηλιά**	**Fire resistant/Drought tolerant**	Approx. 2559 plants	Salvia is an important genus consisting of about 900 species in the family Lamiaceae. Some species of Salvia have been cultivated world wide for use in folk medicine and for culinary purposes.	2559
						TOTAL	**7185**

Scientific name	Common Name	Type of Vegetation	Picture	Tolerance taxonomy	Tolerance	Specificities	Hazards-Benefits	Irrigation Young Plants (lowercase)
Phoenix canariensis, Palmaceae	Date Palm/ Canary Island Date Palm / Pineá	Palms		Severe Drought||Flood	Very Drought Tolerant: Once established. Flood Tolerant.	Soil: Prefers well-drained loamy soil. Tolerates a wide range of soil types, sand and heavy clay. Climate: Mediterranean, wet-summer or humid subtropical climates.	Benefits: Tolerances.	Plant Age: 1 - 2 Years_x000D_Average Monthly Water Quantity: 40 L_x000D_Reduced Average Daily Water Quantity: 3,2 L_x000D_Days: 3 To 5 Per Month
Phoenix theophrasti	Cretan Date Palm	Palms		Drought	Drought Tolerant: Once established.	Soil: Prefers moist, well-drained soils. Tolerates most PH (6 to 7.5) of soil. Climate: Native to the eastern Mediterranean. Water: Ample irrigation in droughts, reduce watering during the winter in colder areas.	Benefits: Tolerances.	Plant Age: 1 - 2 Years_x000D_Average Monthly Water Quantity: 50 L +_x000D_Reduced Average Daily Water Quantity: 3,2 L_x000D_Days: 5 To 8 Per Month
Washingtonia robusta, Palmaceae	Mexican Fan Palm or Mexican Washingtonia	Palms		Droughtt||Windt||Salt	Drought Tolerant: Once established. Heat Tolerant, Wind Tolerant, Good Salt Tolerance.	Soil: Prefers well-draining soil and compost rich soil. Tolerates most types of soil including loamy and sandy soil. Tolerates acidic or alkaline soils. Adapts to most soils. Optimal growth, soil should be moist and have a good drainage. Climate: Prefers a dry mediterranean climate & direct sunlight.	Benefits: Tolerances	Plant Age: 1 - 2 Years
Acacia arabica	Babul, Koa	Trees		Drought	Drought Tolerant.	Regions: Commonly found in dry regions. Largely found in the Indian sub-continent. Medicinal: This herb has multiple health benefits and is goodat treating many diseases. The parts of the tree used for medicinal purposes are stem bark, fruit, gum, and seeds. It is an ayurvedic herb that is used to mainly treat skin diseases, diabetes, bleeding disorders and intestinal worms.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 50 L +
Acacia cyanophylla, Leguminosae	Coojong, Golden wreath wattle, Orange wat	Trees		Drought	Drought Tolerant, Alkalinity Tolerant, Salt Tolerance.	Soil: Prefers well-drained soil. Suitable for sandy, loamy and heavy soils ph: acid, neutral and basic soils and can grow in very alkaline and saline soils. Conditions: Prefers sun. Cannot grow in the shade.	Benefits: Potential food sources of Ω6 fatty acids and antioxidants.	Reduced Average Daily Water Quantity: 3,2 L
Acacia farnesiana	Perfume wattle	Trees		Fire||Droughtt||Frost	Drought Tolerant, Frost Tolerant, Fire Resistant.	Soil: Tolerates saline soils and other growth-limiting conditions. Region: It is probably native to tropical America, from Brazil and Peru to Mexico and the southern USA, and has been widely planted across the world, becoming naturalized in many countries. It is a tropical and sub-tropical species, though it shows some tolerance to frost in Mediterranean climates.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances.	Days: 5 To 8 Per Month
Acer circinatum	Norway maple, Harlequin maple	Trees		Fire	Fire Resistant.	Soil: Suitable for light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay soil. Suitable ph: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. Medicinal: The wood was burnt to charcoal and mixed with water and brown sugar then used in the treatment of dysentery and polio. Other Use: The sap contains a certain amount of sugar and can either be used as a drink, or can be concentrated into a syrup by boiling off the water.	Hazards: Most maples are inhibiting the growth of nearby plants. Benefits: Medicinal, Tolerances.	Plant Age: 1 - 2 Years
Aesculus hippocastanum	Buckeye and horse chestnut	Trees		Fire||Moderate Drou	Fire Resistant, Moderate Drought Tolerant.	Region: It is a major amenity tree in Europe and it is native to the central, southern and eastern Balkan peninsula, but has been very widely planted as an amenity tree across Europe. It is native to mainland Greece. Landscaping: The tree is commonly planted for ornamental and landscape features in parks and urban areas. Medicinal: It is of economic importance for wood production and medicinally the major active substance aescin (or escin) extracted from the seeds is used for upset stomachs.	Hazards: The current population is declining. Benefits: Medicinal, Tolerances.	Average Monthly Water Quantity: 30 L
Albizia julibrissin, Leguminosae	Persian Silk tree, Pink Silk Tree	Trees		Drought||Extreme Wind||Salt	Drought Tolerant, Strong Wind Tolerant. Medium Tolerance for high ph saline soils.	Soil: It requires a well-drained moisture retentive soil and a very sunny position. Succeeds in dry soils. Highly fertile soils can promote soft sappy growth which is frost tender. They also succeed in poor soils. Climate conditions: Open sunny ravines, forests and by rivers up to 2100 metres in the Himalayas. The young growth in spring, even on mature plants, is frost-tender and so it is best to grow the plants in a position sheltered from the early morning sun.	Hazards: It Is Considered To Be a Non - Native Species in some Areas Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Albizia lebbeck	Tibet - Shirish Tree	Trees		Drought||Frost	Dry Seasons Tolerant, Moderately Frost Tolerant. The seeds do not tolerate frost. Alkalinity Tolerant.	Soil: Prefers light (sandy), medium (loamy) and heavy (clay) soils, well-drained soil and can grow in nutritionally poor soil. Prefers a PH in the range 6 - 7, tolerating 5.5 - 8.5 suitable PH: acid, neutral and basic (alkaline) soils and can grow in very acid, very alkaline and saline soils. It also prefers moist soil. Climate conditions: Prefers humid tropics, semi-arid to sub-humid areas, elevation up to 1800m with temp 26-36°C, generally 12-48°C. Prefers full sun. May be established under condition of low (400mm/y) and irregular rainfall. Preferable annual rainfall 600-2000mm but tolerates 500-2500mm.	Hazards: It Is Considered To Be a Non - Native Species in some Areas Benefits: Tolerances.	Days: 5 Per Month
Alnus rubra, Tenuifolia	Red Alder	Trees		Fire||Drought||Salt	Fire Tolerant. Drought Tolerant: Once established. Tolerates Saline Soil.	Soil: Suitable for medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. Suitable PH: acid, neutral and basic (alkaline) soils. Prefers moist or wet soil. Climate conditions: Can grow in semi-shade (light woodland) or no shade. Time: early spring, late spring, mid spring. A fast-growing but short-lived tree. Durability: Wood - soft, straight-grained, very durable in water. Other Environmental Uses: Bacteria on the roots fix atmospheric nitrogen. Landscape: Used for erosion control.	Benefits: Tolerances, Environmental, Landscape Uses.	Plant Age: 1 - 2 Years
Arbutus unedo, Ericaceae	Strawberry Tree	Trees		Drought||Maritime Exposure||Air Pollution	Drought Tolerant. Air Pollution Tolerant, Maritime Exposure Tolerant.	Soil: Prefers light (sandy) and medium (loamy) soils. Prefers well-drained soil and can grow in heavy clay soil. Prefers dry or moist soil. Suitable ph: acid, neutral and basic (alkaline) soils. Conditions: Time: early fall, early winter, late fall, late winter, mid fall, mid winter.	Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Azadirachta indica	Neem, Indian lilac, Mahogany, Azadira d'Ind	Trees		Severe Drought	Very Drought Tolerant, once established. Can survive 7–8 months Dry Seasons	Soil: Doesn't prefer waterlogged soils, deep dry sands where the dry-season water table lies below 18 m. Prefers well-drained soil. Climate conditions: Prefers lowland tropics and subtropics. Elevation: best 700-900m and up to 1500m. Temperatures: 26-40°C but it tolerates 14-46°C. Rainfall: It prefers 450-1200mm | tolerates 200-2000mm.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Cassia fistula	Golden Shower	Trees		Semi Drought||Frost	Relatively Drought Tolerant, Dry Seasons Tolerant, Tolerates Light and Brief Frost.	Soil: It prefers well-drained soil. Climate conditions: It prefers full sun. Medicinal: Many medicinal properties like are astringent, cooling, purgative, febrifuge, tonic, laxative, anthelmintic, emetic, antiperiodic, febrifuge, diuretic, depurative, carminative, anti-inflammatory, diuretic and ophthalmic.	Benefits: Medicinal, Tolerances.	Days: 5 Per Month
Catalpa speciosa	Northern catalpa, Hardy catalpa, Western ca	Trees		Fire||Drought||Air Pollution	Fire Resistant: Able to survive fire and then quickly proliferates and out-competes native tree species post-fire. Drought Tolerant, Tolerates Air Pollution.	Soil: Adapted to moist, high ph soil.Tolerates clay soil. Climate conditions: Grows in midwestern United States. May have experienced a decline in range before European settlement.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Celtis occidentalis	Nettletree, Sugarberry, Beaverwood, Northe	Trees		Moderate Drought||Flood	Moderate Drought Tolerant, Tolerance of excessive soil moisture or Flooding: Once established.	Soil: Prefers rich moist soil, but will grow on gravelly or rocky hillsides. Tolerates a range of soil conditions. Best in fertile, moist but well-drained soils. Common on limestone soils. Considered an indicator of high ph (7.2) soils. Climate conditions: Temperature and precipitation vary widely. Lanscaping: Occasionally used as a street or landscape tree, tolerant to urban conditions.	Benefits: Tolerances, Urban Landscaping.	Average Monthly Water Quantity: 30 L
Ceratonia siliqua, Leguminosae	Carob, St John's Bread, Hebrew Tree	Trees		Fire||Drought||Salt	Fire Resistant,Heat Tolerant, Drought Tolerant, Saline Tolerant	Soil: Prefers well-drained, sandy loams and are intolerant of waterlogging. Fairly salt-tolerant (up to 3% in soil). Conditions: seeds are still widely used as the propagation medium. Enters slowly into production phase. Water: After irrigated with saline water in the summer, could possibly recover during winter rainfalls. Young trees basic physiological functions under high salt conditions (40 mmol NaCl/l). Other Environmental Use: May be helpful in degraded areas threatened by soil erosion and desertification.	Benefits: Tolerances, Environmental.	Reduced Average Daily Water Quantity: 3,2 L
Cercis canadensis	Eastern Redbud	Trees		Fire||Moderate Drought	Fire Resistant:Root sprouts after fire. Moderate Drought Tolerant depending on sun conditions.	Soil: Performs best in moderately fertile soils with regular and consistent moisture. Avoid wet or poorly drained soils. Easily grown in average, medium moisture, well-drained soils in full sun to part shade. Climate conditions: Prefers part shade is best in hot summer climates. Grown in parks and gardens, with several cultivars being available.	Benefits: Tolerances.	Days: 5 Per Month
Cercis siliquastrum, Leguminosae	Judas tree	Trees		Fire||Drought	Drought Tolerant, Fire Retardant, Alkalinity Tolerant.	Soil: Suitable for light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable PH acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. Conditions: It is in flower in may, and the seeds ripen in September. It can grow in semi-shade (light woodland) or no shade. Other Environmental Uses: It Can Fix Nitrogen. It Is Noted For Attracting Wildlife.	Benefits: Tolerances. Environmental.	Plant Age: 1 - 2 Years
Cornus florida, Nuttalli	Mountain dogwood	Trees		Fire||Moderate Drought	Fire Resistant: commonly resprout from the root crown after aboveground vegetation is damaged or destroyed by fire. Moderate Drought Tolerant of seasonal dry periods.	Soil: It prefers average, medium moisture, well-drained soils in full sun to part shade. Prefers moist, organically rich, acidic soils in part shade. Climate conditions: It benefits from a 2-4" mulch which will help keep roots cool and moist in summer. Conditions: Full sun to part shade.	Benefits: Tolerances.	Average Monthly Water Quantity: 40 L +

Delonix regia	Flamboyant tree	Trees	Drought||Salt	Drought Tolerant, Saline Soil Tolerant.	Soil: It prefers sandy soils. It tolerates from clay to sandy. It prefers as soil PH of 5.5 - 6.5 and tolerates a PH of 4.5 - 7.5. Climate conditions: It prefers tropical / near tropical climate |temperature: 14 - 26°C. Prefers shady sites than sunny. Winds: It has no strength against strong storms and winds mean annual rainfall is over 700mm. Elevation: It prefers up to 2000m, >2000: flowering comes erratic. Prefers areas with hugh and scanty rainfall.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Elaeagnus angustifolia, Elaeagnaceae	Oleaster, Russian Olive	Trees	Drought||Flood||Wind||Salt	Drought Tolerant, Flood Tolerant, Saline Soil Tolerant, Wind Resistant.	Soil: Prefers well-drained soil, light sandy soil only moderately fertile It tolerates poor and dry soil. Climate conditions :It tolerates up to -40°C requires full sun growing very well in hot dry positions It is wind resistant.	Benefits: Tolerances.	Days: 5 To 6 Per Month
Eucalyptus globulus, Myrtaceae	Tasmanian bluegum, Southern blue-gum or	Trees	Drought	Drought Tolerant.	Soil: Limiting soil factors are insufficient depth, poor drainage, salinity and the presence of a high content of assimilable carbonates. However, where climatic conditions are favourable, suitable performance is reported on shallow and sometimes stony soils, particularly if subsoiling is practised.. Climate conditions: It is adapted to subtropical climates with winter rainfall, such as the mediterranean region and to cool zones of tropical mountains, but it is not hardy in warm, temperate climates. The major successes have been attained largely in mild, temperate climates and at high elevations in cool, tropical climates. Other Environmental Use: Used for Erosion control: its wide-spreading and dense root system is very useful in erosion control.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Environmental.	Plant Age: 1 - 2 Years
Ficus elastica, Moraceae	Rubber fig, Rubber bush, Rubber tree, Rubt	Trees	Fire||Drought	Fire Resistant, Drought Tolerant, Shade Tolerant.	Soil: a well-draining and well-aerated potting soil is needed. It is tolerant of a wide range of soil types. Origin: Comes from India, Nepal, Myanmar, China & others. Climate conditions:The average room temperatures of 60 - 75°F (15 - 24°C) are fine. Better avoid lower than 55°F (12°C), sudden temperature drops and cold drafts. A nice brightly lit spot is ideal, without direct sunlight.	Benefits: Tolerances.	Average Monthly Water Quantity: 40 L
Ginkgo biloba	Ginkgo or Gingko, Maidenhair tree	Trees	Fire||Air Pollution	Fire Resistant, Air Pollution Resistant.	Region: It is native range is southern China. Conditions: Full sun Soil: Easily grown in average, medium moisture soil in full sun. Prefers moist, sandy, well-drained soils. Tolerant of a wide range of soil conditions, including both alkaline and acidic soils and compacted soils. Adaptation: Adapts well to most urban environments.	Hazards: Only Species, All Others Being Extinct. Benefits: Tolerances, Adaptation.	Reduced Average Daily Water Quantity: 3,2 L
Gleditsia triacanthos	Honey Locust, Thorny Locust	Trees	Fire||Drought	Resputs after Fire, Drought Tolerant.	Soil: best grown in organically rich, moist, well-drained soils in full sun. Tolerant of a wide range of soils. Climate: also tolerant of wind, high summer heat, drought and saline conditions. Region: native range: central and eastern north America. Landscaping: Suggested use: Street tree. Other Environmental Use: It Is Used in soil reclamation projects as a barrier hedge, and is also sometimes grown as an ornamental plant.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Environmental.	Days: 5 To 6 Per Month
Gymnocladus dioicus	Kentucky Coffee Tree	Trees	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: best grown in moist, organically rich, well-drained soils in full sun. Avoid heavy clays however. It tolerates poorer soils. Region: Its native range is central and eastern US and Canada. Adaptation: It adapts well to urban conditions. Suckers to form colonies in the wild. Landscaping: It is a good landscape tree for large lawns and parks.	Benefits: Tolerances, Adaptation.	Plant Age: 1 - 2 Years
Juglans	Walnut Trees	Trees	Fire||Drought	Fire Resistant: Young trees are killed by fire but older trees resist and survive fire and proliferate. Drought Tolerant.	Soil: Prefers moist, organically rich, well-drained soils in full sun. Intolerant of shade. Difficult to transplant because of deep taproot. Region: Its native range from Europe to central Asia. Landscaping: Suggested use as a shade tree.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 30 L
Koelreuteria paniculata	Golden rain tree	Trees	Drought||Air Pollution	Drought Tolerant, Air Pollution Tolerant.	Soil: Easily grown in average, dry to medium, well-drained soil in full sun. Tolerates clay soil. Adaptation: Adapts to a wide range of soils. Region: Its native range is northern China, Korea and Japan. Landscaping: Suggested use as a shade tree, street tree, flowering tree.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Laurus nobilis, Lauraceae	Bay tree, Sweet bay, Grecian laurel, True la	Trees	Fire||Drought||Extreme Wind	Fire Resistant: Its thick, waxy leaves are resistant to fire. Drought Tolerant, Tolerates Hard Winds.	Soil: It prefers moisture retentive well-drained fertile soil. It tolerates up to -5°C and up to -15°C but it may defoliate and recover in spring/summer. Climate conditions: It prefers full sun | tolerates in light shade. Region: Its native range is northern Africa, western Asia, southern Europe.	Benefits: Tolerances.	Days: 5 Per Month
Liquidambar styraciflua	American storax, Hazel pine, Bilsted, Redgu	Trees	Fire	Fire Tolerant.	Soil: Easily grown in average, medium moisture, well-drained soils in full sun. Intolerant of shade. Tolerates clay. Prefers deep, moist, fertile soils, but seems to tolerate a wide variety of soils. Avoid alkaline soils however. Climate: Trees don't prefer winter. Region: Its native range is eastern US and Mexico. Landscaping: Suggested use:as a shade tree.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Melia azedarach, Meliaceae	Tulip cedar, Cedar, White persian lilac, Kara	Trees	Fire||Extreme Droug	Fire Resistant: Roots possibly survive fire. Can be established in fire damaged areas. Very Drought Tolerant.	Soil: Suitable for light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable ph: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil. Climate: It requires a sunny sheltered position. it is not very cold tolerant being killed by temperatures lower than about -5°C. Region: E. Asia, North India and China. Naturalized in the Mediterranean. Other Environmental Use: They are planted for re-afforestation in their native areas.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. All parts of the plant contain toxins that can cause gastric tract irritation and degeneration of the liver and kidneys. Benefits: Tolerances, Environmental.	Average Monthly Water Quantity: 40 L
Myrtus communis, Myrtaceae	Myrtle	Trees	Drought	Drought Tolerant.	Soil: Best grown in moderately fertile, medium moisture, well-drained soils in full sun to part shade. Established plants have some drought tolerance. Sharply drained soils are important. Climate: Prefers full sun to part shade. Region: Its native range is Mediterranean and southwestern Europe. Medicinal: The essential oil is extracted from a wide variety of medicinal uses.	Benefits: Tolerances, Medicinal.	Reduced Average Daily Water Quantity: 3,2 L
Olea europaea, Oleaceae	Olive, African olive, European olive	Trees	Drought||Salt||Alkalinity	Drought Tolerant, Salinity Tolerant, Pollution Indicator.	Soil: It prefers well-drained deep fertile soil | tolerates: loamy soil, infertile soils, dry soils PH. Climate conditions: It tolerates up to -10°C. Requires full sun. Medicinal: Used in traditional medicine against high blood pressure, gout, arteriosclerosis and rheumatism but it is not listed. Other Environmental Uses: Bioindicator for environmental pollution.	Benefits: Tolerances, Environmental, Medicinal.	Days: 5 To 6 Per Month
Parkinsonia aculeata	Jerusalem thorn	Trees	Drought||Extreme Wind	Drought Tolerant, Strong Wind Tolerant.	Soil: prefers well-drained, moist soil | tolerates: in sandy, loamy and clay soils. ph: prefers 5-6.5 | tolerates: 4.3-7.3 Conditions: elevation: tolerates up to 1600m Climate conditions: temperature: prefers 27-36°C | tolerates 10-40°C. Prefers sunny position. Annual rainfal: prefers 1200-1800mm | tolerates 1000-3000mm. Thrives best under more or less seasonal conditions with a dry season 1-3months. Medicinal: Leaf, fruit and stem decoctions are taken orally and applied externally to treat fever, atony and malaria. Other Environmental Uses: It is used for erosion control and reforestation in sandy, arid areas. Also used for the reclamation of wastelands, gullied areas and mining spoil. It forms impenetrable hedges and makes an effective windbreak	Benefits: Tolerances, Environmental, Medicinal.	Plant Age: 1 - 2 Years
Peltophorum inerme	Yellow flame tree, Peltophorum pterocarpur	Trees	Moderate Drought||Wind||Salt	Medium Drought Tolerance, Medium Sunlight Tolerant, Medium Wind Tolerant, Low Salinity Tolerance, Alkalinity Tolerant.	Soil: Suitable for light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable ph: acid, neutral and basic (alkaline) soils and can grow in very acid, very alkaline and saline soils. Region: Native to S. Asia. Conditions:It prefers open or disturbed forest conditions, it is frequently found along beaches and in mangrove forests, especially the inner margins of mangroves. It is also found growing wild in imperata grassland fields and teak forests Other Environmental Uses: It can fix nitrogen. Medicinal: In traditional medicine it is used as an astringent to cure or relieve intestinal disorders after pain at childbirth, sprains, bruises and swelling or as a lotion for eye troubles, muscular pains and sores. It is also used for gargles and tooth powders.	Benefits: Tolerances, Environmental, Medicinal.	Average Monthly Water Quantity: 40 L +
Picea Pungens	Colorado spruce	Trees	Drought	Drought Tolerant, Salinity Tolerant, Air Pollution Tolerant, Cold Tolerant: Once established.	Soil: Easily grown in average, acidic, medium moisture, well-drained soils in full sun. Tolerates some light shade. Prefers rich, moist soils. Although established plants have some drought tolerance, soils should be kept consistently moist and not allowed to dry out in the early years. Climate conditions: It generally prefers cool climates and will struggle in the heat and humidity of the deep south and full sun. Landscaping: It makes an excellent landscape specimen/accent.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L

Plumeria obtusa	White frangipani	Trees	Drought	Drought Tolerant.	Region: It's native range central America, Caribbean. Conditions: full sun, dry to medium watering, maintenance medium. These plants are best grown in rich, dry to medium moisture, well-drained loams in full sun. Soil: Suitable for light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable PH acid, neutral and basic (alkaline) soils and can grow in very alkaline and saline soils.	Benefits: Tolerances. Hazards:The current population is declining.	Days: 5 To 6 Per Month
Pongamia pinnata	Indian beech	Trees	Drought||Salt||Wind	Drought Tolerant: Once established, Salinity Tolerant, Wind Tolerant, Alkalinity Tolerant.	Region: E. Asia through south-east asia to NE Australia and Japan. Conditions: It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It prefers moist or wet soil. Other Environmental Uses: It can fix nitrogen.	The Seeds Are Poisonous Benefits: Tolerances, Environmental. Hazards: It may host organisms.	Plant Age: 1 - 2 Years
Prosopis cinerea	Ghaf	Trees	Extreme Drought	Very Drought Tolerant (Desert Tree).	Region: It is native to arid portions of western Asia and the Indian subcontinent, including the Gulf. It is an established introduced species in parts of Southeast Asia. Other Environmental Uses: It is indicative of the presence of a deep water table. Soil: Prefers medium moisture, well-drained soils in full sun to part shade. Adaptation: Adaptable to a wide range of soils.	Benefits: Tolerances, Environmental.	Average Monthly Water Quantity: 30 L
Prunus cherry	Plums, Cherries, Peaches, Nectarines, Apric	Trees	Fire	Fire Resistant, Heat and Humidity Tolerant.	Region: Its native range is Japan. Conditions: Grows best in full sun. Landscaping: Its suggested use as a shade tree, street tree, flowering tree. Soil: Easily grown in average, dry to medium moisture, acidic soil in full sun. Prefers fertile, sandy, finely-textured soils with good drainage.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Quercus sp., Fagaceae	Oak	Trees	Drought||Air Pollution	Drought Tolerant: Once established. Air Pollution Tolerant.	Region: Its native range is Eastern North America. Conditions: Prefers full sun. Landscaping: Its suggested use as a shade tree, street tree. Soil: It grows in average, dry to medium, well-drained soils in full sun. It tolerates some light shade, but avoid shady locations. Tolerates a wide range of soils including sandy or nearly barren ones. Best performance is in moist, organically rich loams. Good drought tolerance.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances.	Days: 5 Per Month
Robinia pseudoacacia	Black locust, False acacia	Trees	Fire||Moderate Drought||Air Pollution	Fire Resistant, Moderate Drought Tolerant, Air Pollution Tolerant.	Region: Its native range is eastern and central US. Conditions: Prefers full sun. Landscaping: Its suggested use as a flowering tree. Other Environmental Uses: It fixes nitrogen.	Hazards: It Is Considered To Be a Non - Native Species in some EU Areas. Benefits: Tolerances, Environmental. Hazards: It May be Considered Illegal in Some Areas.	Plant Age: 1 - 2 Years
Schinus terebinthifolius	Brazilian Pepper Tree	Trees	Drought	Drought Tolerant: Once established.	Soil: It will thrive in average, moist but well-drained soils in full sun. Conditions: Prefers full sun. Landscaping: Its suggested use is to provide a natural environment for local plants and animals.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 30 L
Sorbus aucuparia	Rowan, Mountain-ash	Trees	Fire	Fire Resistant: Resprouts when damaged by top fire. Moderate Salt Spray Tolerant.	Soil: It best grown in moist, acidic, well-drained soils in full sun. As the common name suggests, this is a tree of cool mountain climates that dislikes hot and humid summers. It has a moderate well-drained and drought soil tolerance Region: Its native range is Europe to Asia and Siberia. Conditions: Prefers full sun.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Tabebuia argentea	Yellow Trumpet Tree	Trees	Drought	Drought Tolerant, Salt Water Tolerant.	Soil: It is tolerant of a variety of soils but its growing conditions must include a warm location with no freezing possibility. The plants have a high drought tolerance but do prefer fertile soil with good drainage Region: Origin from Cuba and Hispaniola. It is commonly cultivated and often naturalized or adventive beyond its natural range. It easily escapes cultivation because of its numerous, wind-borne seeds. Native to the American tropics and subtropics. Climate conditions: The mean monthly temperatures vary from a mean minimum of 16°c in January to a mean maximum of 31°C in August. It is highly frost sensitive. It is most commonly found in the subtropical dry, moist and wet zones with an annual rainfall of (850-)1000-2500 mm.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances.	Days: 5 Per Month
Ziziphus spina christi	Arabic (Sidr,Siddir,Nubak,Nabdag,Nabbak,N	Trees	Drought	Drought Tolerant. Dry Season Tolerant 8- 10 months with even 100 mm rainfall annually. (Desert Tree). Frost Intolerant.	Soil: It prefers alluvial plains with deep soils but it can also grow on clay where water is available and saline soils. Climate conditions: It is a plant of arid and semi-arid areas in hot tropical or subtropical areas, found at elevations up to 2,400 metres. It grows in areas where the mean annual rainfall is within the range 100 - 500mm with a dry season of up to 8 - 10 months and the mean annual temperature is 19 - 28°C. Origin: It is native to a vast area of africa stretching from Mauritania through the Sahara and west Africa to the Red Sea. Water: It prefers edges of ponds, river and wadi banks where groundwater is available.	Benefits: Tolerances, Environmental, Landscaping, Medicinal.	Plant Age: 1 - 2 Years
Betula glandulosa	Resin birch	Trees	Fire||Drought	Fire Resistant -Post Fire Regeneration: Sprouts from roots and rhizomes in the appropriate environment. Middle aged trees have a better post fire regeneration, Drought Tolerant (Periodic).	Soil: Prefers light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. Landscaping: The plant is valuable for ground cover. It is either listed as a shrub or a small tree. Medicinal: An infusion of the plant is used as a hair conditioner and dandruff treatment Environmental (General): birches with white coloured bark, such as silver birch, contain betulinic acid and its precursor, betulin. As well as giving the bark its colour, these are thought to protect the tree against extremes of temperature and parasitic infections.	Benefits: Tolerances, Environmental, Landscaping, Medicinal.	Average Monthly Water Quantity: 40 L
Betula Nana	Dwarf Birch	Trees	Fire||Drought	Fire Resistant - Post Fire Regeneration: Sprouts from roots and rhizomes in the appropriate environment. Middle aged trees have a better post fire regeneration, Strong Wind Tolerant. Drought Tolerant (Periodic).	Soil: Prefers light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. Medicinal: An infusion of the plant is used as a hair conditioner and dandruff treatment. A compound at the leaves has been used in the treatment of stomach ache and intestinal discomfort. Environmental (General): birches with white coloured bark, such as silver birch, contain betulinic acid and its precursor, betulin. As well as giving the bark its colour, these are thought to protect the tree against extremes of temperature and parasitic infections. Landscaping: Landscaping small tree. Used in rock gardens.	Benefits: Tolerances, Environmental, Landscaping, Medicinal.	Reduced Average Daily Water Quantity: 3,2 L
Betula papyrifera	Paper birch, White birch	Trees	Fire||Drought	Fire Resistant: It is well adapted to fire, recovering quickly by means of seedling establishment and vegetative regeneration. One of the least flammable trees in forest schemes but not after dry periods. Older trees have excellent postfire behavior. Moderate Drought Tolerant: once established (Periodic). Excellent Cold Tolerant, Moderate Salt Tolerant.	Soil: It is best grown in medium to wet, well-drained sandy or rocky loams in part shade. Soil tolerances: clay; loam; sand; slightly alkaline; acidic; occasionally wet; well-drained. Region: Native to the cold climates of Canada and Alaska. Medicinal: Birch syrup is a sweetener made from the sap of birch trees, and used in much the same way as maple syrup. It is also used as medicine syrup. Medicinal fungi grow on Betula Papyrifera like; Ganoderma Applanatum, Pleurotus Ostreatus, Inonouts Obliquus etc Environmental (General): birches with white coloured bark, such as silver birch, contain betulinic acid and its precursor, betulin. As well as giving the bark its colour, these are thought to protect the tree against extremes of temperature and parasitic infections. Landscaping: Fast growing landscaping tree.	Benefits: Tolerances, Environmental, Landscaping, Medicinal.	Days: 5 To 6 Per Month
Crataegus douglasii	Black hawthorn	Trees	Fire||Drought	Fire Resistant: When the surrounding area is free from dry grass and the tree does't have dry parts it is fire tolerant and has excellent Postfire behavior. Otherwise it is very flammable especially at both Low and High Severity Fires. Drought Tolerant, Wind Tolerant, Alkalinity Tolerant.	Soil:Suitable for light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. Region: It is a north American species. Medicinal: Antirheumatic, Astringent, Cardiotonic, Hypotensive, Poultice, Stomachic. Lanscaping: Small flowering landscape tree for lawns or streets.	Benefits: Tolerances, Landscaping, Medicinal.	Plant Age: 1 - 2 Years
Aerva Javanica	Al Ara	Shrubs	Drought	Drought Tolerant.	Soil: It is a perennial semi-shrubby plant and succeeds in heavy soils in the wild, although it is more commonly found in light and sandy soils. Climate conditions: Prefers drier areas in the tropics and subtropics where it is found at elevations from sea level to 1,900 metres. Requires a sunny position and semi-arid and arid regions (in inland areas and also near the sea). Medicinal: In traditional medicine the plant is used in cough, strangury, headache and urolithiasis. Pharmacological studies reported diuretic, anti-inflammatory, hypoglycemic, anti-diabetic, antiparasitic, antimicrobial, hepoprotective, anti-urolithiasis, antiasthmatic, antifertility and hypolipidemic properties.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 40 L

Agave americana, Agavaceae	American agave, American aloe, Century pl	Shrubs	Drought	Drought Tolerant: It is drought resistant, it does respond well to watering during its summer growing period.	Soil: Prefers sandy, loam,well-drained and PH: acid, neutral. Soil tolerances: alkaline; clay; sand; acidic; loam. Climate conditions: It isoften naturalised around old habitations and along roadsides in temperate, subtropical and semi-arid regions. However it also grows in pastures, grasslands, open woodlands, coastal environments and in riparian zones. Medicinal: Antiseptic, Diaphoretic, Diuretic, Laxative, Miscellany, Miscellany, Odontalgic. Water: It is important to allow the potting mixture to dry between waterings, so as to avoid root rot. Once it is well rooted, plants grow best when neglected. Lanscaping: It is much favored for use in rock gardens.	Benefits: Tolerances, Medicinal, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Aloe vera, Aloaceae	Aloe	Shrubs	Drought	Drought Tolerant Fire Resistant: It is top-killed by moderate to severe fire. Larger branches may survive light-severity fire. Sprouts from root crown even after intense fire.	Soil: It is a houseplant and it is easily grown in sandy well-drained commercial potting loams.. Water very moderately in spring, summer and fall, but reduce watering to the minimum in winter. Conditions: It is best sited in full sun, but this plant seems to adapt to some part shade. It needs bright light for flowering. Regions: It grows mainly in the dry regions of Africa, Asia, Europe and America. Medicinal: It has been used for medicinal purposes in several cultures. Today, it is used for various purposes in dermatology. Lanscaping: It is much favored for use in rock gardens and xeriscaping. Soil: It is easily grown in average, medium, well-drained soil in full sun to part shade. Adaptable to most soil types with exception of poorly drained or heavy clay soils lacking organic matter. Conditions: Prefers full sun to part shade Regions: Native to North America from Alaska across most of western Canada and in the western and north-central United States.	Benefits: Tolerances, Medicinal, Landscaping.	Days: 5 To 6 Per Month
Amelanchier alnifolia	Saskatoon, Pacific serviceberry, Western se	Shrubs	Fire			Benefits: Tolerances.	Plant Age: 1 - 2 Years
Atriplex canescens	Four wing salt bush	Shrubs	Drought	Drought Tolerant, Maritime Exposure Tolerant.	Soil: Grows in areas with poor soils, often salty, alkaline or clay slopes, stabilized sand dunes, gravelly washes. (PH: 5.4 to 9.2, strongly saline soil). Climate conditions: It requires a position in full sun in any well-drained but not too fertile soil. Succeeds in a hot dry position. Water: Grows most commonly grows in areas that receive 20 cmto 35 cm annual precipitation.	Benefits: Tolerances.	Average Monthly Water Quantity: 40 L
Atriplex halimus	Mediterranean salt bush, Tree purslane	Shrubs	Drought	Very Drought Tolerant, Very Wind Tolerant. A very wind tolerant plant, it is resistant to salt-laden gales, and can be used as a hedge in maritime areas. Alkalinity Tolerant.	Soil: An easily grown plant, it succeeds in full sun in any well-drained but not too fertile soil. Tolerates saline and very alkaline soils. Succeeds in dry soils including pure sands. Climate conditions: It will grow in semi-shade, though they will soon become leggy in such a position, they are really best in full sun. It dislikes very wet climates and tolerates temperatures down to between -5 and -10°C. Water: Requires moderate watering.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Bougainvillea spectabilis	Bougainvillea	Shrubs	Drought	Drought Tolerant: Once established.	Soil: It requires a well-drained soil. Climate conditions:It prefers a full sun exposure. Tropical and subtropical regions-hardy in warm climates. Water: It requires moderate watering where rainfall occurs all year, and becomes deciduous where a dry season occurs.	Benefits: Tolerances.	Days: 5 To 6 Per Month
Caesalpinia pulcherrima	Dwarf Ponciana	Shrubs	Drought	Drought Tolerant.	Soil: It succeeds in any moderately fertile, well-drained soil. It can tolerate a variety including clay; sand, loam, alkaline to acidic, well-drained, and salty soil types, with a moderate aerosol salt tolerance. Climate conditions: It requires a position in full sun. Prefers the tropics and in cooler but frost-free areas it is more likely to become deciduous whislt in areas with occasional frosts it can survive as a perennial plant, dying down to ground level in the cold season but regrowing with the warmer weather. Region: Native to the tropics and subtropics of the Americas. Lanscaping: This is a large seasonal accent shrub for big splashes of bright summer color, quick screen.A showy ornamental and as a living barrier fence.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Calligonum comosum	Abal	Shrubs	Drought	Extremely Drought Tolerant.	Soil: Prefers well drained sand. Region: Grows in extremely arid climates of the saharan and central asian desserts. It is a genus of plants in the family polygonaceae with about 80 species across the Mediterranean sea region, Asia and North America. Other Environmental Uses: Has the ability to survive dry, harsh conditions. Helps stabilize sand dunes. An indicator of fresh water. Medicinal: It has many medicinal uses and anti listerial properties.	Benefits: Tolerances, Medicinal, Environmental.	Average Monthly Water Quantity: 40 L
Carissa grandiflora (Macrocarpa)	Natal Plum	Shrubs	Drought	Drought Tolerant, Wind Tolerant, Salt Spray Tolerant.	Soil: Prefers fertile, moist soil in a sunny or lightly shaded position.Succeeds In a range of soils.Prefers a PH in the range 5.5 - 6.5, tolerating 5 - 8. Climate conditions: Prefers the tropics and subtropics. It grows best in areas where annual daytime temperatures are within the range 23 - 28°C, but can tolerate 10 - 34°C. Landscaping: The plant can be grown as a hedge.At Agriculture it is used as a thorny dense barrier that can keep animals out. Soil: easily grown in average, medium moisture, well-drained soil in full sun. Prefers loose loams. Intolerant of wet, poorly-drained soils. Conditions: Full sun. Region: Native to east Asia.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Caryopteris x Clandonensis	Heavenly blue	Shrubs	Fire||Drought	Fire Resistant, Drought Tolerant.	Lanscaping: Used for home landscaping and for xeriscaping.	Benefits: Tolerances, Landscaping.	Days: 5 To 6 Per Month
Ceanothus thyrsiflorus	Blueblossom or Blue blossom ceanothus	Shrubs	Fire||Drought	Fire Resistant:Seeds banked in soils survive burning and develop the spring following fire. Drought Tolerant.	Soil: It is easily grown in average, dry to medium, well-drained soils in full sun to part shade. Best in sandy loams or rocky soils with good drainage. Thick, woody, red roots go deep and help plant withstand droughty conditions, but make established shrubs difficult to transplant. Region: Its native range Eastern and central north America. Conditions:Prefers full sun to part shade.	Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Chamaerops humilis, Palmaceae	European fan palm	Shrubs	Drought	Drought Tolerant. The most Winter Tolerant Palm.	Soil: Grows best with consistent moisture, but has some drought tolerance once established. Must avoid overly moist soils. Tolerates most soils, as long as it's not wet. Region: Its native range is Western and Central Mediterranean. Conditions:Prefers full sun to part shade est growth occurs in Mediterranean-type climates. Prefers a bright sunny location, but tolerates part shade. It loses compact shape in too much shade.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 40 L +
Helianthemum 'Rhodanthe Carneum'	Rockrose	Shrubs	Fire||Drought	Fire Resistant: Recruits after fire. Drought Tolerant.	Soil: It is best grown in dry, alkaline, rocky or sandy, well-drained loams in full sun. Conditions: It prefers cool summers and warm winters. Landscaping: Rock gardens, borders and ground cover. Sprawls over stone walls or dry, sloping ground.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Clerodendrum inerme	Wild Jasmine	Shrubs	Drought	Drought Tolerant, Salt Spray Tolerant.	Soil: It is not choosy about the soil. Best grown in dry, alkaline, rocky or sandy, well-drained loams in full sun. Conditions: It grows well along the beach. Landscaping: Ground cover or a hedge plant, especially near the sea, as it tolerates the salt spray.	Benefits: Tolerances, Landscaping.	Days: 5 To 6 Per Month
Cyperus alternifolius	Umbrella plant	Shrubs	Drought	Dry Seasons Tolerant, Moderate Salt Spray Tolerant	Soil: Semi-aquatic grass-like plant. It requires to be kept in wet, if not damp, soil at all times. The soil must be kept wet at all times. It will grow in a wide variety of soils in a pH range of 6.0 to 7.0, but it prefers moist, wetter soils. It grows readily in water or at water's edge. Conditions: Prefers arid regions full to medium lighing requirement. Landscaping: Water and bog gardens, containers, houseplant, tropical effect plant, background plant.	Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Cyperus conglomeratus	Rash	Shrubs	Drought	Drought Tolerant	Soil: Prefers sandy places, including sand dunes. Quickly colonizes disturbed ground. Tolerates many adverse soil conditions. They grow best on sandy, moist soils at a pH between 5.0 – 7.5. Conditions: Requires a mild climate. Low temperature, shadow, and light intensity can inhibit flowering. Use: It was once used to make sails, ropes, baskets and mats, and also as fuel. Medicinal: In ayurvedic medicine tiger nuts are used in the treatment of flatulence, diarrhoea, dysentery, debility and indigestion. As it is an antioxidant it helps slow down the ageing of the body cells.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 30 L
Dodonaea viscosa	Hopseed bush, Hop bush	Shrubs	Drought	Dry Seasons Tolerant, Strong Wind Tolerant, Pollution Tolerant.	Soil: Prefers rocky or sandy and well-drained soils. arid regions, particularly in rocky areas. It requires a well-lit area. Conditions:Little maintenance is necessary. However, regular tip pruning will promote growth and branching. Scale may be an issue due to the viscous leaves. Other Environmental Use: It can be used for dune stabilization, remediation of polluted lands and for reforestation. Landscaping:Commonly used as hedge, windbreak, and decorative shrub.	Hazards: Scale May Be An Issue Due To The Viscous Leaves. Benefits: Tolerances, Environmental, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L

Euonymus alatus	Winged spindle, Winged euonymus or Burni	Shrubs	Fire||Drought	Fire Resistant: Sprouts from root crown after top-kill fire. Drought Tolerant, Pollution Tolerant.	Soil: It is easily grown in average, medium moisture, well-drained soil in full sun to part shade. Tolerates close to full shade, but usually at the expense of diminished fall color quality.Appreciates consistent moisture, particularly when grown in full sun locations. Adaptation: It is an adaptable shrub that tolerates a wide range of soils except for wet, poorly-drained ones. Conditions: Prefers full sun to part shade. Landscaping:Used as a Border, Foundation, Hedge and for erosion control.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Days: 5 Per Month
Fremontodendron californium	California Flannelbush, California Fremontia	Shrubs	Fire||Drought	Fire Resistant: Surviving lignotubers sprout following fire. Drought Tolerant.	Soil: The best performance occurs in sheltered positions in full sun in a dry summer climate in gravelly, poor to average, sharply well drained soils. Rich soils often produce excess foliage rather than better flowering. Poorly-drained soils and excess soil moisture often lead to root rot which is typically fatal. Region: Its native range SE US. Conditions: Prefers full sun appreciates some light shade at the heat of the day. Medicinal: the inner bark's sap that was used as a topical remedy for mucous membrane irritation and for gastrointestinal upset, by some of the indigenous peoples of California.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Medicinal.	Plant Age: 1 - 2 Years
Fuchsia group	Fuchsia	Shrubs	Fire	Fire Resistant: Older bushes resprout after fire. Tender Frost Tolerant.	Soil: It is best grown in organically rich, medium moisture, moisture-retentive soils in part shade to full shade. Grow in any well drained average garden soil. Raise beds in clay soil to improve drainage or if planting under established trees. Region: Discovered on the Caribbean island of Hispaniola (Haiti and the Dominican Republic).The majority of Fuchsia species are native to central and south America. An additional number are found on Hispaniola (two species), in New Zealand (three species) and on Tahiti (one species). Landscaping: They make great hedges, are suitable to use for topiary, responding well to pruning and shaping into a standard, and can be espaliered along wires against a shady wall.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 40 L +
Gaultheria shallon	Salal, Shallon, Gaultheria	Shrubs	Fire||Semi Drought	Fire Resistant Generally sprouts from the roots, rhizomes, or stem base after aboveground vegetation is damaged or consumed by fire. Moderate Drought Tolerant.	Soil: It is best grown in organically rich, evenly moist, acidic, well-drained soils in part shade to full shade. Established plants can tolerate some dry soils. Region: Its native range is eastern north America. Conditions: Prefers part shade to full shade. Plants perform best in climates with cool summers. Landscaping: Used in landscaping as an excellent ground cover. Medicinal: The leaves have an astringent effect, making it an effective anti-inflammatory and anticramping herb.	Benefits: Tolerances, Medicinal, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Holodiscus discolour	Ocean Spray or Oceanspray, Creambush, o	Shrubs	Fire||Severe Drough	Fire Resistant: Rroot crown-sprouting. Fire researchers describe it as "moderately resistant" to fire. Very Drought Tolerant: Adapted to dry sites and drought by shutting down or slowing its rate of transpiration.	Soil: It succeeds in a good loamy soil that does not become too dry in summer (prefers moist soil). Suitable for sandy, loamy and clay soils. Region: In western N. America. Tolerances: it has moderate drought tolerance and low fertility requirements. Medicinal: The seeds are a blood purifier. An infusion has been used in the treatment of smallpox, black measles and chickenpox. The blossoms have been used in the treatment of diarrhoea. The inner bark is tonic. An infusion has been used as an eyewash.	Benefits: Tolerances, Medicinal.	Days: 5 To 6 Per Month
Jatropha integerrima	Jatropha, Spicy Jatropha	Shrubs	Drought	Drought Tolerant, Aerosol Salt Tolerant.	Soil: Dry and well-drained soils. Tolerates clay, sand, loam, acidic, alkaline soil. Climate conditions: Prefers tropical full sun to partial shade. Region: Native to the West Indies, and is especially well known from Cuba. Conditions: Light: Full sun to partial shade. Medicinal: Used in traditional medicine.	Benefits: Tolerances, Medicinal.	Plant Age: 1 - 2 Years
Lagerstroemia indica	Crepe Myrtle, Crepeflower	Shrubs	Fire||Drought	Fire Resistant: Drought Tolerant. Low Salt Tolerance. Tolerates Air Pollution.	Soil: It is best grown in average, medium moisture, well-drained soils. Tolerates clay soils. Region: Grows in China, Indochina, Himalayas and Japan. Conditions: Prefers full sun. Landscaping: It is used in soil stabilization projects and is a very ornamental plant, valued especially for its floral display and neat habit, being commonly grown in gardens, as a street tree. Medicinal: The stem bark is febrifuge, stimulant and styptic. A paste of the flowers is applied externally to cuts and wounds. The root is astringent, detoxicant and diuretic.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 40 L
Laurus nobilis, Lauraceae	Bay Laurel	Shrubs	Drought	Fire Resistant: Its thick, waxy leaves are resistant to fire. Drought Tolerant, Tolerates Hard Winds, Air Pollution Tolerant.	Soil: It is best grown in rich, moist, well-drained soils. Tolerates clay soil. Region: Grows in Northern Africa, Western Asia, Southern Europe. Conditions: Prefers full sun to part shade. Medicinal: Traditional medicine use for the treatment of many ailments, particularly as an aid to digestion and in the treatment of bronchitis and influenza. Landscaping: Prefers outdoors, it makes an interesting specimen for shady areas of the landscape including patios, herb gardens and woodland gardens. Excellent houseplant.	Benefits: Tolerances, Medicinal, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Lawsonia inermis	Henna Plant	Shrubs	Severe Drought	Very Drought Tolerant: Once established.	Soil: Prefers a fertile, well-drained or dry soil in a sunny position. Uses: a shrub or small tree widely cultivated as an ornamental and hedge plant and for the commercial production of henna. Region: The earliest known use of the dye (henna) prepared from l. inermis dated to the ancient Egypt. Egyptians used this plant to stain mummies and mummy's wrappings. Later, between 1400-1500 bc, Greeks probably moved this species from the Middle East and north Africa to the Mediterranean islands and Europe. Region: It is native to Mediterranean regions, semi-arid deserts of African and Asian countries, where sandy and dry conditions prevail.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Days: 5 To 6 Per Month
Leptadenia pyrotechnica	Markh	Shrubs	Drought	Drought Tolerant.	Medicinal: It is traditionally used for treating various diseases. It holds variety of bioactive constituents that trigger healing properties. Soil: Prefers alkaline, gravelly, dry to medium, well-drained soils . Thrives in gritty soils with minimal moisture. Overwatering or poorly-drained soils must be avoided. Conditions: Prefers full sun. In areas of high rainfall, consider use of raised beds.	Benefits: Tolerances, Medicinal.	Plant Age: 1 - 2 Years
Leucophyllum frutescens	Texas Ranger	Shrubs	Drought	Drought Tolerant.	Medicinal: Traditional Medicine. Dried leaves and flowers can be brewed into herbal tea, mildly sedative, good as bedtime drink and treating colds.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 30 L
Mahonia japonica	Oregon grape-holly	Shrubs	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Easily grown in moist, well-drained soils. Region: Japan Conditions: Prefers part shade to full shade.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Nerium oleander, Apocynaceae	Oleander	Shrubs	Drought	Drought Tolerant.	Soil: It grows well in average, medium moisture soils. Region: Europe and Asia. Conditions: Prefers full sun to part shade. Landscaping: Hedges, screens, foundation plantings and borders.	Benefits: Tolerances, Landscaping.	Days: 5 Per Month
Opuntia ficus-indica, Cactaceae	Prickly-pear	Shrubs	Semi Drought	Moderate Drought Tolerant.	Soil: It grows well in average, medium moisture soils. Region: Europe and Asia. Conditions: Prefers full sun to part shade. Landscaping: Hedges, screens, foundation plantings and borders.	Hazards: The Plant Has Numerous Minutely Barbed Glochids That Can Cause Considerable Discomfort. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Pachystima myrsinites	Oregon Boxleaf, Oregon Boxwood, Mountair	Shrubs	Fire	Fire Resistant: It can survive low to moderate severity fires that do not consume the duff or raise the soil temperature too high. It can, however, be killed by severe fires.	Soil: Well-drained, shallow, gravelly soils, in clay and silt loams, and cobbly clay. Region: Native to western north America. Other Environmental Uses: It usually indicates dry to moist, cool sites and well-drained soils.	Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Pittosporum tobira, Pittosporaceae	Japanese Pittosporum	Shrubs	Drought	Drought Tolerant.	Soil: It is easily grown in average, slightly acidic, moderately fertile, medium moisture, well-drained soils in full sun to part shade. Region: China and Japan. Conditions: Prefers full sun to part shade. Water: Medium and low maintenance. Landscaping: Used as a hedge.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Rosmarinus officinalis, Labiatea	Rosemary	Shrubs	Drought	Drought Tolerant.	Soil: It may be grown in light, slightly acidic, dry to medium, well-drained soils in full sun. Region: Its native range is Africa, Europe, Western Asia. Conditions: Prefers full sun and water dry to medium. Medicinal: A herb used as a domestic remedy, used especially as a tonic and pick-me-up when feeling depressed, mentally tired, nervous etc.	Benefits: Tolerances, Medicinal.	Days: 5 Per Month

Ruellia brittoniana	Mexican Petunia	Shrubs	Drought	Drought Tolerant.	Soil: Prefers fertile soil with controled moisture, but is very adaptable. Climate conditions: Prefers sun to part shade. The quantity of blossoms is related to the amount of light the plant receives. The more direct the sunlight the more flowers. Survives dry spells once established. .	Hazards: Becomes Aggressive When it is Grown in Abundant Moisture. Benefits: Tolerances.	Plant Age: 1 - 2 Years
Salvadora persica	Tooth Brush Bush	Shrubs	Drought	Drought Tolerant.	Region: It is found in the dry and arid regions of india. It is widely distributed in the drier parts of Baluchistan, Ceylon and in the dry regions of west Asia and Egypt. Medicinal: It has potential medicinal and research activities. It is useful to produce antiplaque, analgesic, anticonvulsant, antibacterial, antimycotic, cytotoxic, antifertility, deobstruent, carminative, diuretic, astringent, and also used in biliousness, and rheumatism.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 40 L +
Spiraea japonica 'Bumalda'	Japanese Spirea	Shrubs	Fire||Drought	Fire Resistant, Drought Tolerant, Air Pollution Tolerant.	Soil: Medium moisture, well-drained soils. Clay soil tolerant. Region: Africa, Europe, western Asia. Conditions: Full sun. Landscaping: Hedge for path and walkways. Incorporates well into foundation plantings.Used for erosion control.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. . Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Symphoricarpos albus	Common Snowberry	Shrubs	Fire	Fire Resistant: High fire resistant. New growth sprouts from rhizomes and roots after fire.	Soil: Grows in average, medium moisture, well-drained soils in full sun to part shade. Adaptation: Adapts to a wide range of soils including poor ones. Region:Its native range is NE America. Conditions:Prefers full sun. Landscaping: Naturalize in open woodland areas. Used for Erosion control.	Benefits: Tolerances, Environmental, Landscaping.	Days: 5 To 6 Per Month
Syringa vulgaris, Spidouglasii	Lilac	Shrubs	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Requires medium moisture, well-drained soil. Prefers moist, fertile, organically rich, slightly acidic to slightly alkaline soil. Conditions: Prefers full sun. Landscaping: Excellent as a specimen or in small groups. Used for shrub borders.	Hazards: Powdery Mildew Frequently Attacks In Summer. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Vitex agnus-castus	Lilac Chastetree	Shrubs	Severe Drought	Very Drought Tolerant, Moderate Aerosol Salt Tolerant.	Conditions: It is a brackish water dweller, indicating that it tolerates salt. Cold and wet weather results in dieback and losses. The plant grows well on loamy neutral to alkaline soil. Tolerates clay, loam, sand, acidic, alkaline, well-drained soil. Regions: It is widely cultivated in warm temperate and subtropical regions. Medicinal: Its fruit is used as a dietary supplement for conditions such as menopause, infertility, menstrual problems, and a number of other conditions. Landscaping Use: Recommended for buffer strips around parking lots or for median strip plantings in the highway. No proven urban tolerance.	Benefits: Tolerances, Medicinal, Landscaping.	Average Monthly Water Quantity: 40 L
Yucca aloifolia, Liliaceae	Yucca	Shrubs	Drought	Drought Tolerant.	Soil: Prefers well-drained soil. Tolerates acid, neutral and alkaline soils and nutritionally poor soil. Adaptation: Highly adaptable to different environments. Region: Coastal plain of the southern US and Mexico. Conditions: Prefers sunny to partly sunny. But grows in semi-shade or full sun. Other Environmental Uses: Amenity, boundary, barrier or support, firebreak, landscape improvement.	Benefits: Tolerances, Environmental.	Reduced Average Daily Water Quantity: 3,2 L
Adenium obesum	Desert Rose	Ground Covers/Grasses	Drought	Drought Tolerant, Heat Tolerant.	Soil: Prefers loose, sandy or gravelly, well-drained soil. Region: Tropical Africa, Arabian Peninsula. Conditions: Prefers full sun.	Benefits: Tolerances.	Days: 5 To 6 Per Month
Aerva javanica	Desert Cotton	Ground Covers/Grasses	Drought	Drought Tolerant.	Soil: Grows in poor, gravelly soil, scrub jungles and fallows from plains to 400m. Region: Drier parts of the tropics and subtropics. Landscaping: It is deep rooted, and is used as soil binder in desert reclamation.	Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Agave americana	Century Plant	Ground Covers/Grasses	Drought	Severe Drought Tolerant, Salt Spray Tolerant.	Soil: Prefers sandy/gritty, dry to medium moisture, well-drained soil. Region: Southwestern United States, Mexico. Conditions: Prefers full sun. Landscaping: Large space in which to grow, often grown in cactus or succulent garden areas. Soil: Prefers sandy, loam and PH acid, neutral. Tolerates dry and saline soils.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 40 L
Agave angustifolia marginata	Carribean Agave	Ground Covers/Grasses	Drought	Drought Tolerant, Salt Spray Tolerant.	Conditions: Prefers full sun and little water. Landscaping: Coastal, interiorscape, indoor plant.	Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Agave desmettiana	Dwarf Century Plant	Ground Covers/Grasses	Drought	Drought Tolerant.	Soil: Prefers sandy gritty, dry to medium moisture, well-drained soil. Tolerates dry soil, shallow-rocky soil. Region: Eastern Mexico. Conditions: Prefers full sun to part shade and hot desert climates. Landscaping: Serves as an interesting tropical accent or specimen.	Benefits: Tolerances, Landscaping.	Days: 5 To 6 Per Month
Ajuga reptans	Bugle, Bluue Bugle, Bugleherb, Bugleweed,	Ground Covers/Grasses	Fire||Semi Drought	Fire Resistant, Moderate Drought Tolerant.	Soil: Tolerates a wide range of soil conditions as long as soil is well drained. The soil should be acidic with a PH in the range of 3.7 to 6.5. Regions:Grows in Europe, western Asia and Iran. Climate conditions: Requires part shade. Will grow in full shade, but best foliage color usually occurs in part-sun locations. Provides good air circulation in hot and humid areas where crown rot is a problem. Landscaping: Used as a border plant, mass planting, container, shade, wildlife, erosion control, ground cover. Water: Easily grown in average, medium moisture, well-drained soils in full sun to part shade.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Aloe vera	Burn Plant	Ground Covers/Grasses	Drought	Drought Tolerant.	Soil: It is easily grown in sandy well-drained commercial potting loams. Adaptation: Prefers full sun, but this plant seems to adapt to some part shade. Region: Its native range is the Mediterranean. Conditions: Prefers full sun. Water: Dry, No special requirements. Medicinal: The sap from a broken leaf may be applied directly to burns on the skin for relief. The sap also reportedly has strong laxative properties. Medicinal aloe is also commonly called burn plant or burn aloe. Soil: PH acidic, neutral. Well drained loam, sand.	Benefits: Tolerances, Medicinal.	Average Monthly Water Quantity: 40 L
Antennaria rosea	Rosy Pussytoes	Ground Covers/Grasses	Fire||Drought	Fire Resistant: It's response depends on fire serevity. Drought Tolerant.	Climate conditions: It grows poorly in hot humid climates. It is a plant of many habitats, from dry to wet climates and low elevation to very high. Water: Requires more attention to watering than woody plants. Drip irrigation is very efficient and water-conservative. In dry climates, form a soil "ring" around plants to hold water longer.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Aquilegia	Columbine	Ground Covers/Grasses	Fire||Drought	Fire Resistant: Red columbine sprouts from the caudex following fire and wild columbine can survive fire. Drought Tolerant.	Soil: Easily grown in average, medium moisture, well-drained soil in full sun to part shade. TPrefers organically rich, moist soils with light to moderate shade. Keep soils uniformly moist after bloom to prolong attractive foliage appearance. Tolerates a wide range of soils except heavy, poorly drained ones. Region: Its native range is Europe. Condition: Prefers full sun to part shade.	Benefits: Tolerances.	Days: 5 To 6 Per Month
Arctostaphylos uva-ursi	Bearberry Manzanita, Mealberry	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Grows in sandy and loamy soils. Prefers well-drained soil and can grow in nutritionally poor soil. Suitable PH acid, neutral and basic alkaline soils and can grow in very acid soils. It also prefers moist soil. Climate conditions: It is widespread in northern latitudes, but confined to high altitudes further south. It can handle a wide variety of sun conditions, from full sun to part shade to full shade, and tolerates summer water up to 1x per month. It can grow in full shade, semi-shade or no shade. Landscaping: It is a common groundcover in urban areas. Does best near the coast where temperatures are lower and less supplemental water would be needed. Environmental: it is useful for controlling erosion.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Armeria maritima	Sea Thrift	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Infertile, dry, well-drained soils. Foliage mounds tend to rot in the center if grown in moist, fertile soils or in heavy clay. Good drainage is essential. Region: Its native range is Europe, North America. Conditions: Prefers full sun. Landscaping: Impractical large scale ground cover due to slow spread	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 40 L
Aubrieta deltoidea	Lilacbush, Purple Rock Cress and Rainbow	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant. Also tolerates high heavy metal concentrations and accumulates e.g. 2000 (leaves) to 4000 (roots) times more copper in comparison to plants growing under normal conditions.	Soil: Soil PH neutral, and well drained loam, sand. Climate conditions: Prefers sun exposure: full sun, partial sun. Water: Fast growing plants require more attention to watering than woody plants. Drip irrigation is very efficient and water-conservative. In dry climates, form a soil "ring" around plants to hold water longer.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Aurinia saxatilis	Basket-of-gold	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Dry average to sandy, well-drained soils in full sun. Avoid heavy clay soils. Region: Its native range Central and Southeastern Europe. Conditions: Best in full sun, however plant foliage appreciates some afternoon shade in hot summer climates.In Hot and humid summer climates, this plant is difficult to grow well and can be very short-lived. Water: dry	Benefits: Tolerances.	Days: 5 To 6 Per Month

Bougainvillea nana	Dwarf Bougainvillea	Ground Covers/Grasses	Semi Drought	Moderately Drought Tolerant, Salt Tolerant.	Soil: Prefers an organically enriched fertile soil with a ph 5.6 – 7.8, acidic to mildly alkaline. Climate conditions: Prefers full sun and reflected heat to partial shade. Requires some protection from salty coastal winds. Water: Does not accept over irrigation or waterlogging. Planting: Low shrub hedge, groundcover, container plant, in planters and on green rooves. Soil: Clay, sand, acidic, alkaline, loam soil and salt tolerance. Regions: Grows mainly in coastal areas in south Africa. Today the plant is also growing commonly in southern Florida and is cultivated in southern California and used widely as an ornamental in central America and the Caribbean.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Carissa grandiflora	Dwarf Natal Plum	Ground Covers/Grasses	Drought	Drought Tolerant.	Climate conditions: It requires warm, moist subtropical climate. It tolerates different exposures as full sun and fairly heavy shade. As a coastal plant it can deal very well with salty ocean spray.	Hazards: All Parts Of Natal Plum Are Poisonous Except For The Ripe Fruits. Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Ceanothus prostratus	Prostrate Ceanothus, Pinemat and Mahala M	Ground Covers/Grasses	Fire||Drought	Fire Resistant: Responds favorably to fire depending on severity. Most seeds survive and the plant stump-sprouts after fire. Drought Tolerant: Very tolerant of stress and can withstand both cold and hot temperature extremes, drought, and poor site conditions.	Soil: Prefers soil with good drainage. Regions: It is native to the pacific northwest of the US. It is unusual to be found growing at subalpine levels. High winds and high temperatures are not favorable, it needs a partial sun situation. Prefers a warm sunny position but tolerates light shade.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Cerastium tomentosum	Snow-in-Summer	Ground Covers/Grasses	Fire	Fire Resistant.	Soil: Best grown in dry, sandy, well-drained soils in full sun. Tolerates a somewhat wide range of soils except poorly-drained ones. Climate conditions: It is typically massed in sunny locations as a ground cover. Grows well in cool summer climates. Intolerant of the high summer heat and humidity .	Benefits: Tolerances.	Days: 5 Per Month
Crassula argentea	Jade Plant, Lucky Plant, Money Plant or Mo	Ground Covers/Grasses	Drought	Drought Tolerant.	Soil: Rich, well-draining soil. Region: (native range:) South Africa. Conditions: Requires little water in the summer, and even less in the winter.also flowers in the wintertime, particularly during a cooler, darker, dry spell. It is susceptible to overwatering.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Delosperma nubigenum	Yellow Ice Plant	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Grows in average, dry to medium, well-drained soils in full sun. Prefers a dryish, sandy soil. Good soil drainage is essential for the plant, particularly in winter where moist to wet soils can be fatal. Climate conditions: Prefers warm winter climates. Grows in average in full sun. Water: Avoid overwatering.	Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Echinacea purpurea	Purple Coneflower	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Grown in average, dry to medium, well-drained soil.Tolerates clay soil, dry soil, shallow-rocky soil, poor soil. Region: Its native range NE America. Conditions: Prefers full sun to part shade. Water: Dry to medium. Medicinal: Perennial medicinal herb with important immunostimulatory and anti-inflammatory properties. Landscaping: Naturalize.	Benefits: Tolerances, Medicinal, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Epilobium angustifolium	Willow Herb	Ground Covers/Grasses	Fire||Semi Drought	Fire Resistant: Its production may vary with severity of fire. Moderate Drought Tolerant.	Soil: Prefers sandy, loamy and heavy clay soils and prefers well-drained soil. Suitable PH acid, neutral and basic. It can grow in semi-shade or no shade. It prefers dry or moist soil. Adaptation: To rocky ground, waste areas, woodland edges and gardens. Region: Europe, Asia and N. America.	Hazards: An Infusion Of The Leaves May Stupefy A Person. Benefits: Tolerances.	Days: 5 Per Month
Euphorbia milii	Crown of Thorns, Christ Plant, or Christ Tho	Ground Covers/Grasses	Drought	Drought Tolerant, Salt Tolerant.	Soil: Prefers a permeable, humous and sandy substrate either be a mixture of soil and sand or a substrate mixture. The ideal PH of the soil should be between 6 and 6.8. Climate conditions: Does not tolerate temperatures below 10 °C (50 °f). Prefers direct light, temperature in rest period – min 13°C max 24°C (55-75°F), temperature in active growth period – min 16°C max 24°C (61-75°F), low humidity. Water: Grown in normal room temperatures moderately, enough to make the entire potting mixture moist, but allowing the top couple of centimetres (0.8 inch) of the mixture to dry out between waterings. Moderately watering in rest and in active growth period. Landscaping: It is a valuable addition to tropical gardens.	Hazards: The Sap Is Moderately Poisonous, And Causes Irritation On Contact With Skin Or Eyes. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Gaillardia varieties	Blanket Flower	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Prefers average, medium moisture, well-drained soils in full sun to part shade. Daylilies perform well in a wide range of soils, but prefer deep, fertile loams. Conditions:Prefers full sun to part shade. Water: Medium. Its tolerant of summer heat and humidity, but appreciate deep watering in dry spells to keep foliage attractive.	Benefits: Tolerances.	Average Monthly Water Quantity: 40 L +
Hemerocallis	Daylily	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant, Air Pollution Tolerant.	Other Environmental Uses: The roots help keep the soil in place, minimizing erosion problems.	Benefits: Tolerances, Environmental.	Reduced Average Daily Water Quantity: 3,2 L
Iris - bearded, Iris germanica	Iris	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Prefers humusy, medium moisture, well-drained soils in full sun. Best flowering and disease resistance occur in full sun. Plants will tolerate light shade. Good soil drainage is essential to combat potential soft rot problems. Prefers PH in the range 6 to 7.5 or higher. Region: Eastern Mediterranean. Conditions: Dry rocky places, semi-shade or no shade.	Hazards: The Leaves, And Especially The Rhizomes, Of This Species Contain An Irritating Resinous Substance Called Irisin. Benefits: Tolerances.	Days: 5 To 6 Per Month
Kniphofia uvaria	Red-hot Poker	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Prefers average, medium moisture, well-drained soils in full sun. Prefers rich, humusy soils. It is intolerant of wet, heavy soils.root rot in poorly-drained soils. Region: Southern Africa. Condition: Prefers full sun. Water: Medium.	Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Lampranthus spectabilis	Trailing Ice Plant	Ground Covers/Grasses	Drought	Drought Tolerant: once established. Salt Tolerant:Grows in coastal conditions.	Soil: Neutral soil PH, sandy, well-draining soil. Thrives in well-drained, poor soils and are suitable for soils with a sandy or rocky texture, although they'll grow in almost any soil type. Species: It is fairly large genus with 100-150 species coming from South Africa. Landscaping: It is widely used as ground cover, either annual or perennial as the climate allows. Water: Low water needs. Should water the plants immediately after planting.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 30 L
Lavandula angustifolia	English Lavender	Ground Covers/Grasses	Fire||Drought	Fire Resistant: Low flammability plant. Drought Tolerant, Air Pollution Tolerant.	Soil: Average, dry to medium, well-drained, alkaline soil in full sun. Well-drained soils are required, particularly in winter. Plants may not survive in winter if soils are not well-drained and/or if temperatures dip below zero degrees without protective snow cover.Prefers a light, sandy soil with somewhat low fertility. Region: Europe Conditions: Prefers full sun. Medicinal: he essential oil is much more gentle in its action than most other essential oils and can be safely applied direct to the skin as an antiseptic to help heal wounds, burns etc. An essential oil obtained from the flowers is antihalitosis, powerfully antiseptic, antispasmodic, aromatic, carminative, cholagogue, diuretic, nervine, sedative, stimulant, stomachic and tonic.	Benefits: Tolerances, Medicinal.	Reduced Average Daily Water Quantity: 3,2 L
Lupinus	Lupine	Ground Covers/Grasses	Fire	Fire Resistant: Sprouting of previously established plants in burned areas.	Soil: Prefers organically rich, moderately fertile, slightly acidic, evenly moist, well-drained soils. Region: Grows well in the cool summers of the US. Conditions: Prefers full sun. Water: Medium - best flowering is in full sun, but plants appreciate some light afternoon shade in hot summer areas. Good air circulation helps combat powdery mildew. Plants dislike the heat and humidity. Landscaping: Naturalize	Benefits: Tolerances, Landscaping.	Days: 5 Per Month
Papaver orientale	Oriental Poppy	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Sandy and medium loamy soils. Prefers well-drained soil and can grow in nutritionally poor soil. Suitable PH acid, neutral and basic alkaline soils. Region: Meadows, usually in sub-Alpine zones, but also on stony slopes in the lower mountain zone Conditions:It is a cold weather plant that needs a period of winter dormancy. It is generally intolerant of the high summer heat and humidity in the deep south.Prefers full sun and medium water. Landscaping: Naturalize.	Hazards: Although no specific mention has been found for this plant, many species in this genus are toxic to mammals. Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years

Pennisetum divisum	Thymum	Ground Covers/Grasses	Drought	Drought Tolerant, Air Pollution Tolerant.	Region: A glabrous bushy perennial grass with stout woody stems of the dry Saharan area of air in Niger, and in Africa, Arabia and India.In Olden times in Egypt and Arabia it was commonly grown for its grain. Conditions: sun: full sun to part shade. Protected from winter and winds. Water: medium, maintenance: low Other Use: General agriculture. Landscaping: Naturalize.	Benefits: Tolerances, Landscaping.	Average Monthly Water Quantity: 30 L
Pennisetum setaceum rubrum	Red Fountain Grass	Ground Covers/Grasses	Drought	Drought Tolerant: It is drought tolerant, however water once or twice a week until plants are established.This Drought tolerant grass is grown as an annual in all but the warmest regions, but its rapid growth provides quick color in any location.	Soil: Grows in loamy soil, drought/dry soil, dry, average, well draining. Region: It is an outstanding accent plant for the annual border. It is very fast growing and will form a large clump. It tends to be an arching, upright plant. Landscaping: Naturalize.	Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Reduced Average Daily Water Quantity: 3,2 L
Pennisetum setaceum	Fountain Grass	Ground Covers/Grasses	Drought	Drought Tolerant: It is drought tolerant so watering sufficiently every week or two should be adequate.	Soil: Grows in normal or sandy or clay, average or moist soil with neutral or alkaline or acid PH. Climate conditions: It may be treated as an annual or wintered indoors. Clumps are easily divided in early spring, still getting large and flowering the same year. Widely used in municipal plantings. Landscaping: Used in municipal plantings.	Hazards: Hazards: It Is Considered To Be a Non - Native Species in some Areas. Benefits: Tolerances, Landscaping.	Days: 5 Per Month
Penstemon	Beardtongue	Ground Covers/Grasses	Fire|| Semi drought	Fire Resistant, Moderate Drought Tolerant.	Soil: Grows in Sandy, loamy and heavy clay soils. PH acid, neutral and basic alkaline soils. It can grow in semi-shade or no shade. It prefers dry or moist soil. Region: Grows in dry plains, prairies and open or wooded slopes at low to fairly high elevations. Conditions: Prefers full sun. Water: Dry to medium	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Perovskia atriplicifolia	Russian Sage	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant, Maritime Exposure Tolerant, Air Pollution Tolerant, Alkalinity Tolerant.	Soil: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable ph: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. Region: open rocky places. Freely draining gravels and screes. Himalayas, western china . Conditions: it cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Phlox subulata	Moss Phlox	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Climate conditions: Requires full sun and well-drained soil. Water: Benefit from fertilization and from regular irrigation in dry weather during the growing season.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Portulaca grandiflora	Moss Rose	Ground Covers/Grasses	Drought	Drought Tolerant: It is drought and heat tolerant. In the flower garden, watering is seldom needed. It is drought tolerant, but not cacti.	Soil: Prefers average to poor soils. They prefer loose, sandy or loam soil. A well draining composition is important. Regions: Native to south america, moss rose, or portulaca, is a hardy annual. Climate conditions: Needs full sun to flower. Water: Tolerates periods of dryness, but flowering is better with regular irrigation. Drip irrigation is best, as sprinklers can disfigure the delicate blooms. Conditions: Overly bright sunlight can char the leaves and cause them to drop off. The most common mistake made in succulent plants is watering.	Benefits: Tolerances.	Days: 5 Per Month
Portulacaria afra	Small Leaf Jade	Ground Covers/Grasses	Drought	Drought Tolerant: It is drought tolerant but do require watering from April to October.	Region: Native to South Africa and Swaziland. Landscaping: Indoor plants. Soil: Prefers average, dry to medium, well-drained soils in full sun.Suitable PH acid, neutral and basic alkaline soils. Tolerates somewhat poor soils. Intolerant of moist heavy clays. Region: Grows in dry plains, prairies and ravines. Conditions: Prefers full sun.	Benefits: Tolerances, Landscaping.	Plant Age: 1 - 2 Years
Ratibida columnifera	Mexican Hat Plant	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Water: Dry to medium. Soil: this plant thrives in moist, fertile, humusy but well-drained soils. It is a versatile plant that tolerates an extremely wide range of growing conditions. It thrives as a marginal water plant and in boggy soils. It also does well in average garden soils with even moisture.	Benefits: Tolerances.	Average Monthly Water Quantity: 30 L
Ruellia brittoniana	Wild Petunia	Ground Covers/Grasses	Drought	Drought Tolerant: Established plants have respectable drought tolerance. Plants also tolerate high heat and humidity.	Conditions: sun: full sun to part shade. Water: medium to wet, maintenance: medium Soil: Soil based potting mix. Region: Nigeria Conditions: Prefers part shade.prefers warm, sunny locations, but tolerates some shade. Protect from hot afternoon sun.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Sansevieria trifasciata	Mother-in-laws Tongue	Ground Covers/Grasses	Drought	Drought Tolerant.	Water: Medium Significantly reduced watering from fall to late winter. Do not pour water on the center of the rosette. Overwatering often causes root rot. Soil: Prefers average, dry to medium moisture, well-drained soils in full sun. Likes sandy or gravelly soils. Tolerates poor soils, dry soils and shallow-rocky soils. Needs sharp soil drainage to perform well. Region: Central Europe	Benefits: Tolerances.	Days: 5 Per Month
Sempervivums	Houseleeks	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant, Air Pollution Tolerant.	Conditions: Prefers full sun. Water: Dry to medium. Avoid overwatering. Regions: It is harvested from the wild in many countries of the world and eaten as a vegetable.	Benefits: Tolerances.	Plant Age: 1 - 2 Years
Sesuvium portulacastrum	Sea Purslane	Ground Covers/Grasses	Drought	Very Drought Tolerant: Once established. Very Salt Tolerant.	Soil: Tolerates acidic and alkaline soils and it is widely distributed in the tropics and subtropics on saltwater beaches. Region: It occurs along all coasts of Africa. Water: Low-maintenance plant, it needs no irrigation or fertilizer. Other Environmental Uses: It is sometimes cultivated as an ornamental and as ground cover to prevent erosion in dune vegetation.	Benefits: Tolerances, Environmental.	Average Monthly Water Quantity: 40 L
Stachys byzantina	Lambs' ears	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant.	Soil: Prefers average, dry to medium, well-drained soils in full sun. Conditions: Appreciates Some light afternoon shade in hot summer climates. Too much shade, however, may impede leaf drying and promote the onset of disease. Prefers full sun Water : Dry to mediium.	Benefits: Tolerances.	Reduced Average Daily Water Quantity: 3,2 L
Thymus praecox	Thyme	Ground Covers/Grasses	Fire||Drought	Fire Resistant, Drought Tolerant, Air Pollution Tolerant.	Soil: Prefers dry to medium, well-drained soils in full sun. Tolerates dry soil, shallow-rocky soil. Loose, sandy or rocky soils with excellent drainage are best. Dislikes moist to wet soils where it tends to rot. Region: Southern, western and central Europe. Conditions: Prefers full sun Water: Dry to medium.	Benefits: Tolerances.	Days: 5 To 6 Per Month
Wedelia trilobata	Creeping Daisy	Ground Covers/Grasses	Drought	Moderate Drought Tolerant, Very Salt Tolerant.	Soil: Prefers damp or wet soil, sometimes in marshes, often along sea beaches, at elevations from sea level to about 600 metres. Succeeds in most soil types. Prefers a well-drained soil, but is very tolerant. Regions: Moist tropics, where it can be found at elevations up to 700 metres. Climate conditions: Can be killed by frosts, but the roots will survive at least some frost and regrow with warmer weather. Succeeds in full sun to moderate shade, flowering more heavily in a sunny position. Medicinal: It is harvested from the wild for local medicinal use. Landscaping: It is sometimes cultivated as an ornamental ground cover. Often cultivated as an ornamental, the plant readily escapes from gardens and forms a dense ground cover, crowding out or preventing regeneration of other species. Other Environmental Uses: It will compete with crops for nutrients, light and water, and reduce crop yields.	Benefits: Tolerances, Environmental, Landscaping.	Plant Age: 1 - 2 Years
Yucca gloriosa	Spanish Dagger	Ground Covers/Grasses	Drought	Drought Tolerant, Air Pollution Tolerant.	Soil: Prefers dry to medium, well-drained soils in full sun. Region: Grows in coastal plains, dunes and sandy woods. Conditions: Prefers full sun. Water: Dry to medium. Other Environmental Uses: The roots help keep the soil in place, minimizing erosion problems.	Hazards: The Roots Contain Saponins.Whilst saponins are quite toxic to people, they are poorly absorbed by the body and so tend to pass straight through. Benefits: Tolerances, Environmental.	Average Monthly Water Quantity: 30 L

FIREATHON SITE

Fireathon site - [Blue Team] input

Όνομα Ιδέας

Ιδέα: Dimitra@HRA (*High Risk Areas*)
Website: Dimitra – Microclimate Monitoring: dimitramonitoring.online

Λογότυπο

Dimitra – Microclimate Monitoring

Η ιδέα σε 10 λέξεις

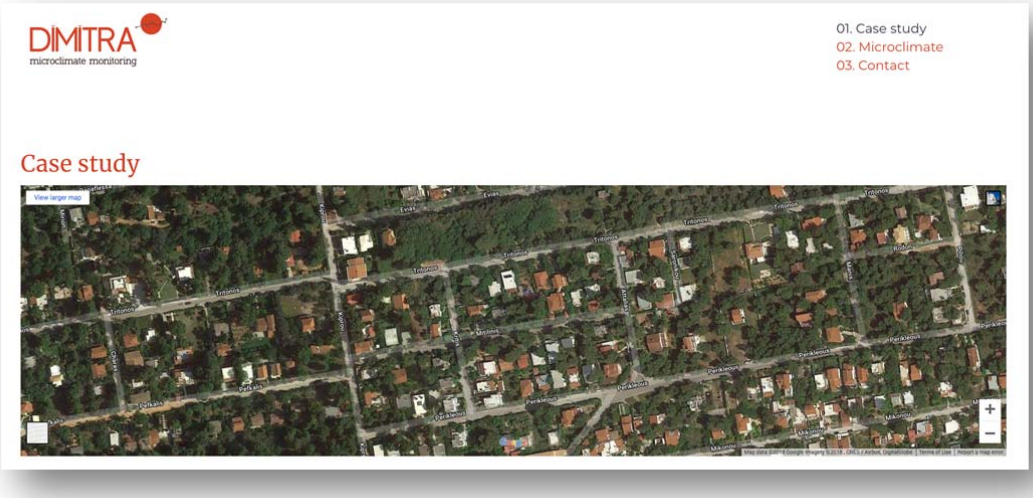
Η δημιουργία μίας διαρκώς αναπτυσσόμενης ιστοσελίδας χωρισμένη σε 2 βασικές ενότητες: η πρώτη, της βάσης δεδομένων με πληροφορίες σχετικές με φυτά ανθεκτικά στις πυρκαγιές τα οποία εμποδίζουν την ανάπτυξη και την μετάδοση της φωτιάς και η δεύτερη, η οποία προσφέρει on demand προσωποποιημένες λύσεις σε ιδιώτες και εταιρείες για την κατασκευή ή και την αναδιαμόρφωση πυράντοχων κτιρίων και περιβάλλοντα χώρου τόσο από άποψης φυτών που ταιριάζουν σε κάθε περίπτωση, αλλά και υλικών.

Βίντεο - Φωτό

Ένα βίντεο 2-3 λεπτών που να εξηγεί τον στόχο (τι θα γίνει αν ολοκληρωθεί), ή/και 3-5 φωτογραφίες.

- Website: https://dimitramonitoring.online/

- Φωτογραφίες από το website:



DIMITRA
microclimate monitoring

01. Case study
02. Microclimate
03. Contact

Microclimate

Scientific or common name Search by the scientific or commor
Tolerance - Any -
Vegetation - Any -

- Acacia arabica
- Acacia cyanophylla, Leguminosae
- Acacia farnesiana
- Acer circinatum
- Adenium obesum
- Aerva javanica
- Aesculus hippocastanum
- Agave americana
- Agave americana, Agavaceae

DIMITRA
microclimate monitoring

01. Case study
02. Microclimate
03. Contact

Microclimate

Scientific or common name Search by the scientific or commor
Tolerance - Any -
Vegetation - Any -

- Acacia arabica

Common name:
Babul, koa

Picture:

Type of Vegetation:
Trees

Tolerance:
Drought

Η ανάγκη σε ως 200 λέξεις

Η ιδέα του έργου προέρχεται από το πολύ λυπηρό περιστατικό που έλαβε χώρα στην περιοχή Μάτι, στο Δήμο Νέας Μάκρης, στην Ελλάδα, στις 23 Ιούλιου του 2018. Πολλοί άνθρωποι έχασαν τη ζωή τους κατά τη διάρκεια αυτών των πυρκαγιών και πολλά ιδιωτικά και δημόσια περιουσιακά στοιχεία καταστράφηκαν.
Αποφάσισαμε λοιπόν να συμμετάσχουμε σε μια εθελοντική πρωτοβουλία που ονομάζεται #Fireathon. Η πρωτοβουλία αυτή διοργανώθηκε από τη SciCo σε συνεργασία με την SciFy και σκοπός της πρωτοβουλίας αυτής ήταν να προταθούν καινοτόμες ιδέες και να καλλιεργηθεί μια διαφορετική νοοτροπία, για την πρόληψη και την αντιμετώπιση των πυρκαγιών αλλά και για την αποκατάσταση των πληγέντων περιοχών.
Έτσι δημιουργήσαμε τη συγκεκριμένη βάση δεδομένων καθώς και on demand υπηρεσία, οι οποίες μπορούν να συμβάλλουν στην δημιουργία μικτών δασικών αναδασωτέων και μη περιοχών, σε περιοχές υψηλού κινδύνου αλλά και σε άλλες περιοχές, για την ανάπτυξη ενός οικοσυστήματος και κατά συνέπεια μικροκλίματος «ανθεκτικού» σε πυρκαγιές, σε περίοδους ξηρασίας, ή έντονων βροχοπτώσεων και προσαρμοσμένου στις νέες κλιματολογικές συνθήκες όπως αυτές διαμορφώνονται λόγω της κλιματικής αλλαγής. Επίσης μπορεί να συμβάλλει στη δημιουργία νέων πυροπροστατευμένων οικισμών με τη χρήση «ανθεκτικών» φυτών προς κάποια ήδη πυρκαγιάς αλλά και πυράντοχων και βιώσιμων οικοδομικών υλικών.

Η ιδέα σε ως 200 λέξεις

Ο σχεδιασμός και η υλοποίηση μίας αναπτυσσόμενης ιστοσελίδας που αποτελείται από:

- μία πλούσια βάση δεδομένων σχετική με φυτά που μετριάζουν την μετάδοση πυρκαγιάς, είναι ανθεκτικά ή/και επιβιώνουν ή/και αναδομούνται κάτω από αντίξοες περιβαλλοντικές συνθήκες και συνθήκες υψηλού κινδύνου όπως κάποια είδη πυρκαγιών (υπόγειες, έρπουσες κι επίκορφες), με τη δυνατότητα ενημέρωσης και προσθήκης δεδομένων αλλά κι επέκτασης και προσαρμογής σε άλλες παρόμοιες συνθήκες υψηλού κινδύνου όπως συνθήκες ξηρασίας, πλημμύρας, ισχυρών ανέμων, διάβρωσης εδάφους κοκ, με τη δυνατότητα χρήσης των δεδομένων και σε άλλες εφαρμογές αντιμετώπισης και διαχείρισης κρίσεων, με στόχο τον σχεδιασμό και την ανάπτυξη ενός βιώσιμου μοντέλου μικροκλίματος που θα συμβάλλει θετικά και στην αντιμετώπιση της κλιματικής αλλαγής όπως και στην ανάπτυξη ενός δικτύου ειδικευμένων συνεργατών που επιθυμούν να συνδράμουν σε αυτό το έργο, έτσι ώστε να μετριαστούν γεγονότα όπως η πυρκαγιά της 23^{ης} Ιουλίου 2018 σε περιοχές υψηλού κινδύνου στην Ελλάδα αλλά και σε όλο τον κόσμο.
- μία υπηρεσία για τους ιδιώτες αλλά και τις εταιρείες που θα επιθυμούσαν μία λεπτομερή 2D ή 3D αναπαράσταση για συγκεκριμένες τους ανάγκες πάντα σχετικές με το πως να κτίσουν ή και να τροποποιήσουν υπάρχοντα κτίρια ώστε αυτά να γίνουν πυράντοχα. Η υπηρεσία αυτή βασίζεται στην στενή συνεργασία ενός δικτύου επιστημόνων οι οποίοι συνεργάζονται ώστε να προσφέρουν λύσεις όσο πιο σωστές και πλήρεις γίνεται και εμπεριέχουν πληροφορίες σχετικές με υλικά, δομή, φυτά κ.ά πολλά στοιχεία.

Τι έχει γίνει ως τώρα (μέχρι και το fireathon)

Όσον αφορά το Website:
Μέχρι τώρα έχει υλοποιηθεί το πρωτότυπο website https://dimitramonitoring.online με περιγραφή της ιδέας, με βάση δεδομένων αποτελούμενη από 138 φυτά με επιλογές ανθεκτικότητας στην πυρκαγιά, στην ξηρασία και με άλλα δεδομένα ανά φυτό όπως ονοματολογικά, χαρακτηριστικών (εδαφολογικών, προέλευσης), αναφοράς σε κινδύνους κι

οφέλη, άλλης ανθεκτικότητας κι άρδευσης και με φόρμα επικοινωνίας και ζήτησης για την υπηρεσία 2D και 3D σχεδίων.

Όσον αφορά τις Βάσεις Δεδομένων:

Από τα 138 φυτά κάποια δεν μεταδίδουν τη φωτιά, κάποια αντέχουν κάποια είδη πυρκαγιών ή αναδομούνται ή μένει άθικτο το ριζικό τους σύστημα μετά από πυρκαγία, κάποια αντέχουν κι αναπτύσσονται σε συνθήκες ξηρασίας ή σε συνθήκες ιδιαίτερης κι αντίξοης εδάφικής σύστασης, άλλα είναι ανθεκτικά στην περίπτωση πλημμύρας κι άλλα σε ισχυρούς ανέμους- εφόσον έχουν αναπτυχθεί - άλλα αναπτύσσονται κάτω από αντίξοες περιβαλλοντικές συνθήκες, κι αλλα συμβάλλουν στην συγκράτηση διαβρωμένων εδαφών, στη ρύθμιση του Αζώτου στο έδαφος κοκ.

Συνολικά έχουμε συλλέξει και καταγράψει 138 φυτά και 21 οικογένειες φυτών (με 7185 φυτά), έχουμε βρει για 434 φυτά τις μελέτες συμπεριφοράς τους σε περίπτωση πυρκαγιάς, έχουμε μελετήσει και καταγράψει τις απαιτήσεις για συμβατική άρδευση για διαφορετικά ηλικιακά είδη φυτών με ταξινόμιση ανά οικογένεια: Φοίνικας - Δέντρο – Θάμνος – Χαμηλή Φύτευση, κι έχουμε υπολογίσει σύμφωνα με τη μέση ετήσια βροχόπτωση την ελάχιστη απαιτούμενη (βιώσιμη) άρδευση για την περιοχή Μάτι με σκοπό την περαιτέρω μελέτη και τον σχεδιασμό ενός βιώσιμου μοντέλου μικροκλίματος για την συγκεκριμένη περιοχή.

Επόμενα βήματα

Τα επόμενα βήματα είναι τα εξής:

1. Επικοινωνία - Συνάντηση με νέους εξιδεικευμένους επιστημονικούς συνεργάτες (Γεωπόνους, Δασολόγους, Αρχιτέκτονες),
2. Προσθήκη φυτών και ειδικών χαρακτηριστικών τους στη βάση δεδομένων,
3. Προσθήκη βιώσιμων κι ανθεκτικών στην πυρκαγιά οικοδομικών υλικών – δημιουργία νέας βάσης δεδομένων,
4. Μετάφραση στα Ελληνικά, προσθήκη επιλογής γλώσσας,
5. Βελτιώσεις στο πρωτότυπο (Αγγλικά).

Ανάγκη υποστήριξης (τι θα βοηθούσε την ολοκλήρωση του έργου)

Εάν έχουμε υποστήριξη στο πλαίσιο της μετάφρασης θα είμαστε ευγνώμονες.

Η ομάδα

Στοιχεία
Ονοματεπώνυμο: Σοφία Κάππου
Ειδικότητα: Πολιτικός Μηχανικός & Μηχανικός Περιβάλλοντος,
Εμπειρία: PM Μελετητικού Έργου, Μελετήτρια Αρχιτεκτονικών & Περιβαλλοντικών Επιπτώσεων, HSQE Manager & Sustainability Coordinator στην Κατασκευή (Εργοτάξιο).

Περιγραφή
«Sofia is a highly experienced, Civil Engineer (MSc) and Environmental Engineer (MEng) and worked for more than 15 years as a Consultant and HSQE & Sustainability Manager in a range of construction sectors including residential, commercial, infrastructure, marine and industrial projects, where Environmental and H&S factors are critical.»

Πληροφορίες #Fireathon
- συμμετείχε στο αρχικό event: ΝΑΙ
- συμμετείχε στη συγγραφή της πρότασης: ΝΑΙ
- συμμετείχε στην προετοιμασία των βάσεων δεδομένων: ΝΑΙ
- συμμετείχε στην δημιουργία του Website: ΝΑΙ για τις βάσεις δεδομένων μόνο
- συμμετείχε στο fireathon (3ήμερο στο Cube): ΝΑΙ

Στοιχεία
Ονοματεπώνυμο: Εμμανουέλλα Αλευροφά
Ειδικότητα: Νομικός (πνευματική ιδιοκτησία) (LLM)
Εμπειρία: Ερευνητής /Web project manager / graphic designer / Ιδιοκτήτρια της επιχείρησης Digital Beings https://digital-beings.com/

Περιγραφή
«Emma. is a digital/brand business owner -DigitalBeings.com- with an experience in EU projects related to Humanitarian actions led through the use and promotion of IT solutions/collaborations - mainly in Latin America. After an LLM in IT and Intellectual Property Law, she decided to combine her legal knowledge to her geek nature to do good in the world on the side of creating nice, custom stuff for the web and for her clients.»

Πληροφορίες #Fireathon
- συμμετείχε στο αρχικό event: ΟΧΙ
- συμμετείχε στη συγγραφή της πρότασης: ΝΑΙ στην 2η ΦΑΣΗ
- συμμετείχε στην δημιουργία του Website: ΝΑΙ
- συμμετείχε στο #fireathon (3ήμερο στο Cube): ΝΑΙ ΣΤΗΝ ΠΑΡΟΥΣΙΑΣΗ

Στοιχεία
Ονοματεπώνυμο: Υβόννη Έλλη Ουζουνίδη
Ιδιότητα: Μηχανολόγος Μηχανικός Αεροναυπηγών Μηχανικών

Περιγραφή
«Yvonne is a highly motivated Engineer, in close collaboration with the industry. She has a broad Engineering background shaped by her studies in Mechanical & Aeronautical Engineering, her experience as a member in ATLAS Team UPat, her Internship in HAI, among others. She has a great experience in 3D CAD modelling, analysis, design and construction and she is currently

	working as an industrial designer in MUEVO.» *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: Εν μέρει στη 2η φάση • συμμετείχε στην προετοιμασία μιας βάσης δεδομενων: ΝΑΙ • συμμετείχε στο #fireathon (3ήμερο στο Cube): ΝΑΙ (το ΣΚ) • Δήλωσε ότι αποχωρεί από την ομάδα στις 07/10/2019
	*Στοιχεία* Ονοματεπώνυμο: Ιάσονας Τζανακάκης Ιδιότητα: Πολιτικός Μηχανικός *Περιγραφή* «Jason is a Civil Engineer with an authentic interest in structural engineering, design and project management support. Pursuing an MEng degree in this field, has qualified him with great technical reflects of changes that could affect a project's scope, schedule, or completion.» *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: ΟΧΙ (υποστήριξε με την συμμετοχή του στην 1η φάση) • συμμετείχε στην προετοιμασία μιας βάσης δεδομενων: ΝΑΙ • συμμετείχε στο fireathon (3ήμερο στο Cube): ΟΧΙ (Εργάζεται εκτός Ελλάδας)
	*Στοιχεία* Ονοματεπώνυμο: Αλέξανδρος Μουντρίχας Ιδιότητα: web developer/3D artist *Περιγραφή* «Are there any samples or videos for a correct resume for someone who is involved in computer science? My addiction for PCs started a few years ago and I'm still learning... I just love the tool of the future...» *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΟΧΙ • συμμετείχε στη συγγραφή της πρότασης: ΝΑΙ στην 2η ΦΑΣΗ • συμμετείχε στην δημιουργία του Website: ΝΑΙ • συμμετείχε στο fireathon (3ήμερο στο Cube): ΝΑΙ ΣΤΗΝ ΠΑΡΟΥΣΙΑΣΗ • Δεν συμμετέχει πλέον στην ομάδα για λόγους υγείας
	*Στοιχεία* Ονοματεπώνυμο: Θεόδωρος Δημητριάδης Ιδιότητα: Senior Drupal Developer *Περιγραφή* «Theodore, after getting a Computer Science degree, decided to become a Drupal developer. And 15 years later he is still active and continues to learn about the development of Drupal websites.» *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΟΧΙ • συμμετείχε στη συγγραφή της πρότασης: ΝΑΙ στην 3η ΦΑΣΗ • συμμετείχε στην δημιουργία του Website: ΝΑΙ

	• συμμετείχε στο fireathon (3ήμερο στο Cube): ΝΑΙ ΣΤΗΝ ΠΑΡΟΥΣΙΑΣΗ
	Στοιχεία Όνομα και Επίθετο: Βασίλης Σαλαπάτας Ιδιότητα: Χημικός Μηχανικός/IT/Συνιδρυτής της SciFy Ιδιότητα στο #Fireathon: #Fireathon Coordinator *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: Υποδείξεις στην 1η ΦΑΣΗ & Υποστήριξη για την υποβολή της αρχικής πρότασης • Αποχώρησε από την ομάδα – ο ρόλος του ήταν Fireathon Coordinator
ΑΡΧΙΚΗ ΟΜΑΔΑ	*Στοιχεία* Όνομα και Επίθετο: Κωνσταντίνος Φερτάκης Ιδιότητα: Ηλεκτρολόγος Μηχανικός/ Μηχανικός ΗΥ *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: ΟΧΙ • συμμετείχε στο fireathon (3ήμερο στο Cube): ΟΧΙ • Αποχώρησε από το fierathon
ΑΡΧΙΚΗ ΟΜΑΔΑ	*Στοιχεία* Όνομα και Επίθετο: Γιάννης Τζανεττής Ιδιότητα: Προγραμματιστής *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: ΟΧΙ • συμμετείχε στο fireathon (3ήμερο στο Cube): ΟΧΙ • Αποχώρησε από το fierathon
ΑΡΧΙΚΗ ΟΜΑΔΑ	*Στοιχεία* Όνομα και Επίθετο: Γιώργος Χερουβείμ Ιδιότητα: Δασοπόνος *Πληροφορίες # Fireathon* • συμμετείχε στο αρχικό event: ΝΑΙ • συμμετείχε στη συγγραφή της πρότασης: ΟΧΙ • συμμετείχε στο fireathon (3ήμερο στο Cube): ΟΧΙ • Αποχώρησε από το fierathon

Οδηγίες:

Ανά άτομο φωτό (ή avatar, αν κάποιος δε θέλει να εμφανίσει το πρόσωπό του) και 4-5 λέξεις για την ιδιότητα του ανθρώπου

Σκεφτόμαστε να βάλουμε και μία ένδειξη "ενεργών μελών" της ομάδας δίπλα στα προφίλ, καθώς κάποιοι από τους αρχικούς συμμετέχοντες σταμάτησαν στην πορεία.
Θα το συζητήσουμε με τους επικεφαλής. Για να υλοποιηθεί κάτι τέτοιο, θα χρειαστούμε για κάθε άτομο που θα αναφέρεται στην "Ομάδα", μία υπόδειξη (Ναι/Όχι) αν:

- *συμμετείχε στο αρχικό event*

- *συμμετείχε στη συγγραφή της πρότασης*
- *συμμετείχε στο fireathon (3ήμερο στο Cube)*

Προαιρετικό: μία παράγραφος για την εμπειρία της ομάδας στο πλαίσιο του Fireathon

Λόγω εργασίας αλλά κι απουσίας κάποιων μελών της ομάδας δεν ήταν εφικτό το να συμμετέχουμε όλοι στο τριήμερο του #Fireathon.
Επίσης κάποια μέλη της αρχικής ομάδας αποχώρησαν κι έγινε ανασύσταση της ομάδας με νέο όνομα όπως και με την συμμετοχή νέων μελών.
Η συνολική εμπειρία ήταν θετική και είχε ιδιαίτερο ενδιαφέρον το πως ξεκίνησε και το πως εξελίχθηκε στην πορεία.

ΕΛΛΑΔΑ 03.10.2018

Η καινοτομία, όπλο στη μάχη με τις φλόγες

ΒΙΚΥ ΚΑΤΕΧΑΚΗ

Οι ομάδες πριν από λίγες ημέρες, παρουσίασαν τις καινοτόμες εφαρμογές τους στο «The Cube», ένα μοντέρνο συνεργατικό χώρο στο κέντρο της Αθήνας.

Ετικέττες:

Λίγες ώρες μετά την καταστροφική πυρκαγιά στο Μάτι, ένα κάλεσμα στη σελίδα του Facebook άρχισε να αναδημοσιεύεται από εκατοντάδες χρήστες και να συνοδεύεται από πολύ θερμά σχόλια κάτω από κάθε ανάρτηση. Ηταν από τις λίγες φορές που η πρόσκληση δεν είχε να κάνει με άλλη μία πρωτοβουλία συγκέντρωσης τροφίμων ή φαρμάκων, αλλά με μία ιδέα, που εκείνες τις ώρες, έκανε ένα βήμα μπροστά: «Οταν μόνο αυτά μπορεί να κάνει το κράτος, τότε δεν μένει παρά να εκμεταλλευθούμε τις γνώσεις που έχουμε και να πάρουμε την κατάσταση στα χέρια μας». Ο Θοδωρής

Αναγνωστόπουλος, ιδρυτής της SciCo, ενός οργανισμού που μέσα από δημοφιλή φεστιβάλ και δράσεις επικοινωνεί επιστημονικά θέματα στο ευρύ κοινό (Athens Science Festival, Mind the Lab κ.ά.) ήταν εκείνος που πήρε την πρωτοβουλία. «Απευθύνθηκα σε μηχανικούς, προγραμματιστές, δασολόγους, πυροσβέστες και ανθρώπους που ασχολούνται με την καινοτομία, ζητώντας τους να ανταλλάξουν ιδέες και να αναπτύξουν τεχνολογίες γύρω από την ανίχνευση, την καταγραφή και την κατάσβεση της πυρκαγιάς, καθώς και να δημιουργήσουν εφαρμογές, χρήσιμες για την ενημέρωση των πολιτών», τονίζει στην «Κ».

«Θα εργαστείτε πάνω σε μία ιδέα και θα μας την παρουσιάσετε. Μη φτιάξετε κάτι που θα είναι για τον δήμο ή το κράτος, αλλά ετοιμάστε προτάσεις που θα απευθύνονται κατευθείαν στους πολίτες». Με αυτή την οδηγία άρχισαν να καταφθάνουν οι πρώτες αιτήσεις για το Fireathon.

Μέσα σε λίγα εικοσιτετράωρα, 60 άνθρωποι, που δεν γνωρίζονταν μεταξύ τους, συνέθεσαν ομάδες και άρχισαν να υλοποιούν τις ιδέες τους. Στα τέλη του Σεπτεμβρίου, οι περισσότερες από αυτές είχαν πάρει σάρκα και οστά, «σβήνοντας» οποιαδήποτε αμφιβολία που είχε διατυπωθεί το πρώτο διάστημα γύρω από το εγχείρημα.

Το ραντεβού τους δόθηκε πριν από λίγες ημέρες στο «The Cube», ένα μοντέρνο συνεργατικό χώρο στο κέντρο της Αθήνας. Η «Κ» βρέθηκε εκεί και παρακολούθησε τις καινοτόμες εφαρμογές που παρουσίασαν οι εμπνευστές της υπό την καθοδήγηση της SciCo και της ΜΚΟ «Sci-Fy».

Οργάνωση και εκπαίδευση

«Αυτό το μπαλάκι του τένις αντέχει στους 400 βαθμούς Κελσίου και μπορεί να μας στείλει πληροφορίες μέσω ενός αναμεταδότη ως προς το πού κατευθύνεται η πυρκαγιά και ποια η ταχύτητά της». Ο Νίκος Τριάντης, δημιουργός του Fire track, μας δείχνει τα πυρίμαχα μπαλάκια με αισθητήρες που διασκορπίζονται στην περιοχή της φωτιάς και στέλνουν χρήσιμες πληροφορίες αυτόματα σε μία ανοιχτή εφαρμογή στο κινητό. «Είναι μία φθηνή λύση, που μας δίνει τη δυνατότητα ακόμη και αν ο μηχανισμός αδρανήσει, να πάρουμε οι ίδιοι την απόφαση για το αν θα πρέπει να φύγουμε από το σπίτι μας και προς τα πού να κατευθυνθούμε», εξηγεί στην «Κ».

«Ετοιμάσου, οργανώσου, έφυγες». Μέσω μιας δωρεάν εφαρμογής, που ονόμασαν «what the fire», τα οκτώ μέλη της ομάδας «Αστραπή» απευθύνονται σε παιδιά και ενήλικες εκπαιδεύοντάς τους σε περίπτωση πυρκαγιάς. «Εχουμε καλύψει σε ποσοστό 99% όλα όσα ενδέχεται να προκύψουν κατά τη διάρκεια της φωτιάς, παρέχοντας εξαντλητικές λεπτομέρειες για όλα τα θέματα», λέει στην «Κ» ο μηχανικός Γιάννης Λάγιος. «Για παράδειγμα εξηγούμε πως, εάν αναγκαστείς να μείνεις στο σπίτι, θα πρέπει να κλείσεις πόρτες και παράθυρα, αλλά να μην τα κλειδώσεις. Δίνουμε κατευθυντήριες γραμμές ως προς το σχέδιο που πρέπει να έχει μία οικογένεια σε περίπτωση που αναγκαστεί να εγκαταλείψει το σπίτι. Η καταστροφή στο Μάτι, μας έκανε να συνειδητοποιήσουμε ότι ζούμε σε μία χώρα από την οποία δεν λείπουν οι φυσικές καταστροφές.

Το ελάχιστο λοιπόν που μπορούμε να κάνουμε, είναι να είμαστε εκπαιδευμένοι και προετοιμασμένοι», τονίζει ο ίδιος.

Λύση σε διπλό πρόβλημα

Ο Αναστάσης Σταμάτης ασχολείται με τον εθελοντισμό και τη δασοπροστασία από τα 18. Ως αναλυτής της αγοράς για νέες τεχνολογίες, συνέβαλε κι εκείνος στο εγχείρημα του Fireathon μέσα από την ομάδα «HERMIT». «Προσπαθήσαμε να λύσουμε ένα διπλό πρόβλημα: Σε μέρες υψηλής επικινδυνότητας να μπορεί κάποιος μέσα από την εφαρμογή μας να γνωρίζει με μεγαλύτερη ακρίβεια σε σχέση με τον χάρτη πολιτικής προστασίας σε ποια σημεία δεν πρέπει να βρίσκεται και επιπλέον εκείνες τις μέρες ένας εθελοντής που κάνει περιπολία στο βουνό να γνωρίζει ποια είναι τα σημεία υψηλού ρίσκου.

Αυτό το καταφέρνουμε χρησιμοποιώντας ανοιχτά δεδομένα μετεωρολογικών σταθμών και αισθητήρες χαμηλού κόστους», μας εξηγεί. Στο Fireathon κάθε παρουσίαση είχε κι ένα ξεχωριστό ενδιαφέρον. Μάθαμε για την εφαρμογή της τηλεματικής σε πυροσβεστικά οχήματα, για ιστοσελίδες με χρήσιμες πληροφορίες αναφορικά με φυτά που αντέχουν σε συνθήκες ξηρασίας ή πυρκαγιάς, καθώς και για απλές εφαρμογές που υπόσχονται να συντονίζουν αποτελεσματικά τις ομάδες αντιμετώπισης κρίσεων.

Σε μία σελίδα που θα δημιουργηθεί στο Διαδίκτυο τις επόμενες ημέρες, θα παρουσιαστούν όλες οι εφαρμογές (έξι στον αριθμό) μαζί με τις λύσεις που προτείνονται, ενώ παράλληλα θα ανακοινωθούν τα επόμενα βήματα με στόχο να επιτευχθεί η αξιοποίησή τους προς όφελος των πολιτών.

ΔΙΑΒΑΣΤΕ
ΕΠΙΣΗΣ

«Πνίγηκαν» από τη σφοδρή κακοκαιρία Χαλκιδική και Θάσος
(/1053063/gallery/epikairothta/ellada/pnighkan-apo-th-sfordh-kakokairia-xalkidikh-kai-8asos)

Η τελική ρύθμιση για αυθαίρετα - Παράταση πέντε ετών
(/1052984/gallery/epikairothta/ellada/paratash-pente-etwn-gia-ry8mish-ay8airetwn)
ΓΙΩΡΓΟΣ ΛΙΑΛΙΟΣ

Η αρένα της διαδικτυακής τηλεόρασης
(/1053128/gallery/politismos/thleorash/thleorash-o-polemos-stis-platformes-molis-arxise)
ΣΑΚΗΣ ΙΩΑΝΝΙΔΗΣ, ΑΙΜΙΛΙΟΣ ΧΑΡΜΠΗΣ

Διακοπή κυκλοφορίας τρένων μετά τις Σέρρες προς Δράμα
(/1053244/article/epikairothta/ellada/diakoph-kykloforias-trenwn-meta-tis-serres-pros-drama)