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Smart Development Through Biodiversity Concept in Armenian Composite Appraising Supportive Progress (ACASP)

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Abstract
Smart development is a nowadays topic. Despite the fact that sustainability has never been aptly computed, Composite Appraising Supportive Progress (CASP) is a pioneering index to assess Combined Sustainable Development Index (CSDI). Biodiversity economics is consistent with the concept of smart development in terms of CASP as: 1. Genes - Society - Universities - Students - Characterization - Supporting Institutions; 2. Species - Economy - Industries - Professors - Guides - Similarity Provisions; 3. Ecosystems - Nature - Organizations - Scientists - Assessments - Planning Management; 4. Functions - Management - Development - Governance - Guidance - Smart Procedures. ACASP is a new approach to educate economists as an opportunity to present educative, engineering, geographic and scientific views on compound procedures for smart development. The current paper is devoted to create CASP for Armenia through smart development using aforementioned biodiversity concept, which is applied to CASP capturing 3 D - Magnitudes with 6 categories each as: Society: Humans, Society Concerns, Knowledge in Practice, Space Science, Political Performances, Transport; Economy: Investment, Human Standards, Production & Consumption, Agriculture, Industry, Tourism; Environment: Land, Water, Air, Biodiversity, Energy, Landscape. The new structure of CASP is performed by means of Armenian existing uniform of proximity relations as smart development through proper governance of situations, knowledge, policies and implementations to progress the economy of Armenia. The geographic proximity types are acquired and categorized as: 1) University (U): Academy (U_1); Research & Development (R&D) (U_2); Onsite Performance (U_3); 2) Industry (I): Industry (I_1); Business (I_2); Management (I_3); 3) Organization (O): Private NGO (O_1); Public Organization (O_2); International Organization (O_3); 4) Application: choice of three (3) main CASP categories within each magnitude as per categorized proximity types of University - Industry - Organization (UIO) through computation of Similarity Index and Similarity Percentage. Performance of Armenian CASP within Smart Development has an emphasis on Space Science with the next representative results as per importance: U – University, N – Nature, S_4 – Space Science, O – Organization, S – Society, E_6 – Tourism, I – Industry, E – Economy, N_4 – Biodiversity. Recommendations are provided to construct species (β) as economy (E) or industry (I) stage through dominancy to regulate genes (α) as society (S) or university (U) stage and ecosystems (γ) as environment (N) or organization (O) stage as per aptly dispensed categories to proceed Armenian CASP.

1. Introduction

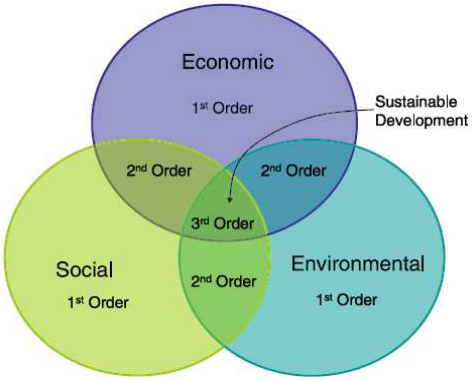
Petrosyan (2014) mentions on the worldwide researches focus on Sustainable Development (SD) as a nowadays topic with four (4) magnitudes in *Picture 1* as:

α. Environment; β. Economy; γ. Society; δ. Sustainability.

Nijkamp and Vindigni (2003) recommends a set of scientific research means to expanse an appropriate methodology in planning of sustainable land-use. Giaoutzi and Nijkamp (1993, 1994) prescribes those methods as:

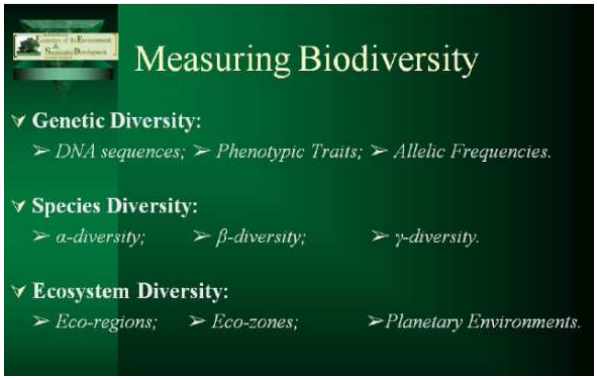
α. Analyzing dynamic systems; β. Studying impacts;
γ. Assessing economy & society; δ. Performing GIS;
ε. Analyzing scenarios; ζ. Performing multi-criteria DM.

Petrosyan (2005) refers to the term "biodiversity" as an important step in inspection and assessment of biological diversity which is shaped from four (4) stages, reorganized as review of biodiversity stages in *Picture 2* and aimed on Pearce and Moran (1994); Nunes etc (2001) papers.



Source: Walton etc (2005)

Picture 1. *Primary Concept of SD.*

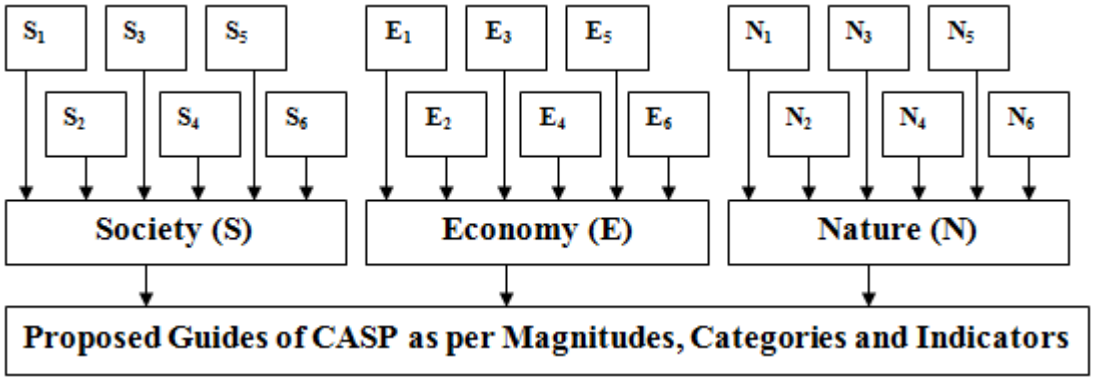


Sources: Petrosyan (2005)

Picture 2. *Review of Biodiversity Stages.*

2. Literature Review

Even though sustainability has never been appropriately calculated, Composite Appraising Supportive Progress (CASP) is a pioneering index to assess Combined Sustainable Development Index (CSDI). The book of Petrosyan (2014) coincides with the paper of Petrosyan (2010) in *Table 1* and *Picture 3* is postured to integrate three (3) magnitudes, such as society, economy and nature, with group of six (6) categories per each magnitude.



Sources: Petrosyan (2014)

Picture 3. *Projected expresses of CASP through Magnitudes, Categories & Indicators.*

Table 1. *Eighteen (18) categories of CASP.*

S	Society	E	Economy	N	Nature
S_1	Humans	E_1	Banking Union	N_1	Land
S_2	Society Concerns	E_2	Human Standards	N_2	Water
S_3	Knowledge in Practice	E_3	Production and Consumption	N_3	Air
S_4	Space Science	E_4	Agriculture	N_4	Biodiversity
S_5	Political Performance	E_5	Industry	N_5	Energy
S_6	Transport	E_6	Tourism	N_6	Environment

Source: Petrosyan (2014; 2010)

An interesting approach is performed to interrelate biodiversity concept with sustainable development stages in real world with further emphasis on vegetation concept in appliance with educational structure. Namely, Petrosyan(2014) proposes depiction of magnitudes of CASP as per biodiversity concept which is viewed by Petrosyan (2015) as educational involvements in *Table 2*.

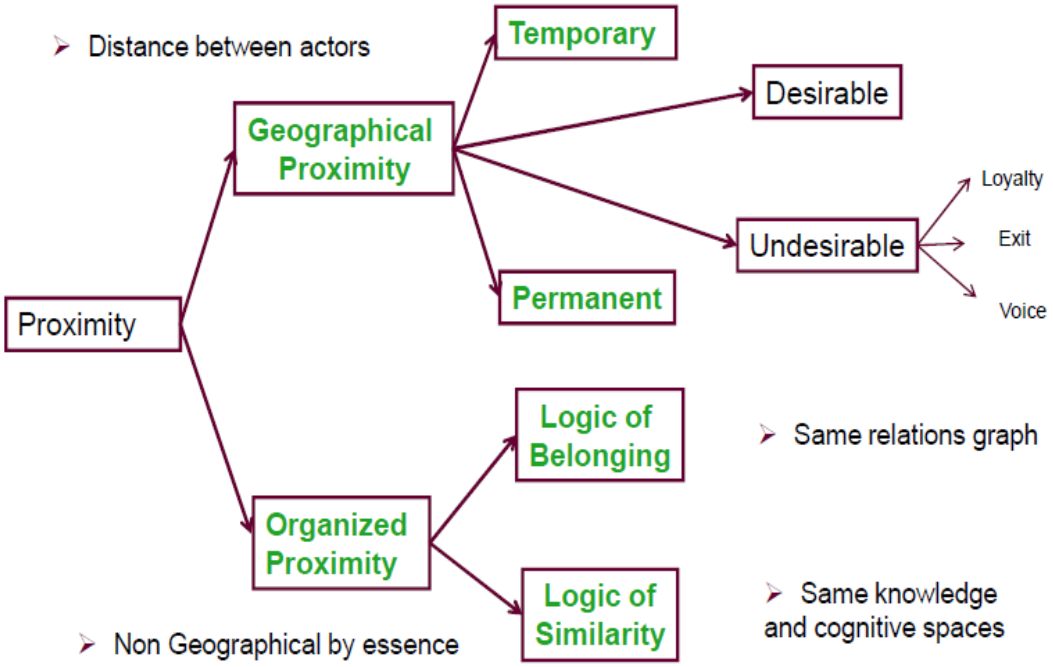
Table 2. *Depiction of Magnitudes of CASP as per Biodiversity Concept.*

Stages	Class			Landscape
Magnitudes	Society	Economy	Nature	CASP
Education	Students	Professors	Scientists	Research
Work	Study	Teach	Innovate	Perform
Categories	Genes	Species	Ecosystems	Functions
Diversities	α	β	γ	Planetary
Fragstat Acronym	C_1	C_2	C_3	L_4
CASP Acronym	N_1	N_2	N_3	N_4
Vegetations	Sparse	Medium	Dense	Eco-zones

Source: Petrosyan (2015; 2014)

Proximity is a new perception which is defined by Torre and Wallet (2013) and progressively used in the worldwide literature on clusters, knowledge transports and innovation within policies with maintenances of these processes and emphases of these topics from the world's leading regional scientists. Torre (2015) further analyzes proximity types in *Picture 4* as:

α. Definition of main features of productive clusters;
β. Selection of related variety within clusters;
γ. Emphasis on the geographic proximity;
δ. Prominence of the meaningful role of distance relations;
ε. Detection of ways of distance relations;
ζ. Depiction the major role of geographic proximity.



Source: Torre (2015)

Picture 4. *Proximity types.*

Proximity concept is applied from another perspective to construct proximity types as per aforementioned sustainable development procedures within biodiversity stages advancing regularity conception. Zipf's law attempts through regularity as per Dentinho (2015):

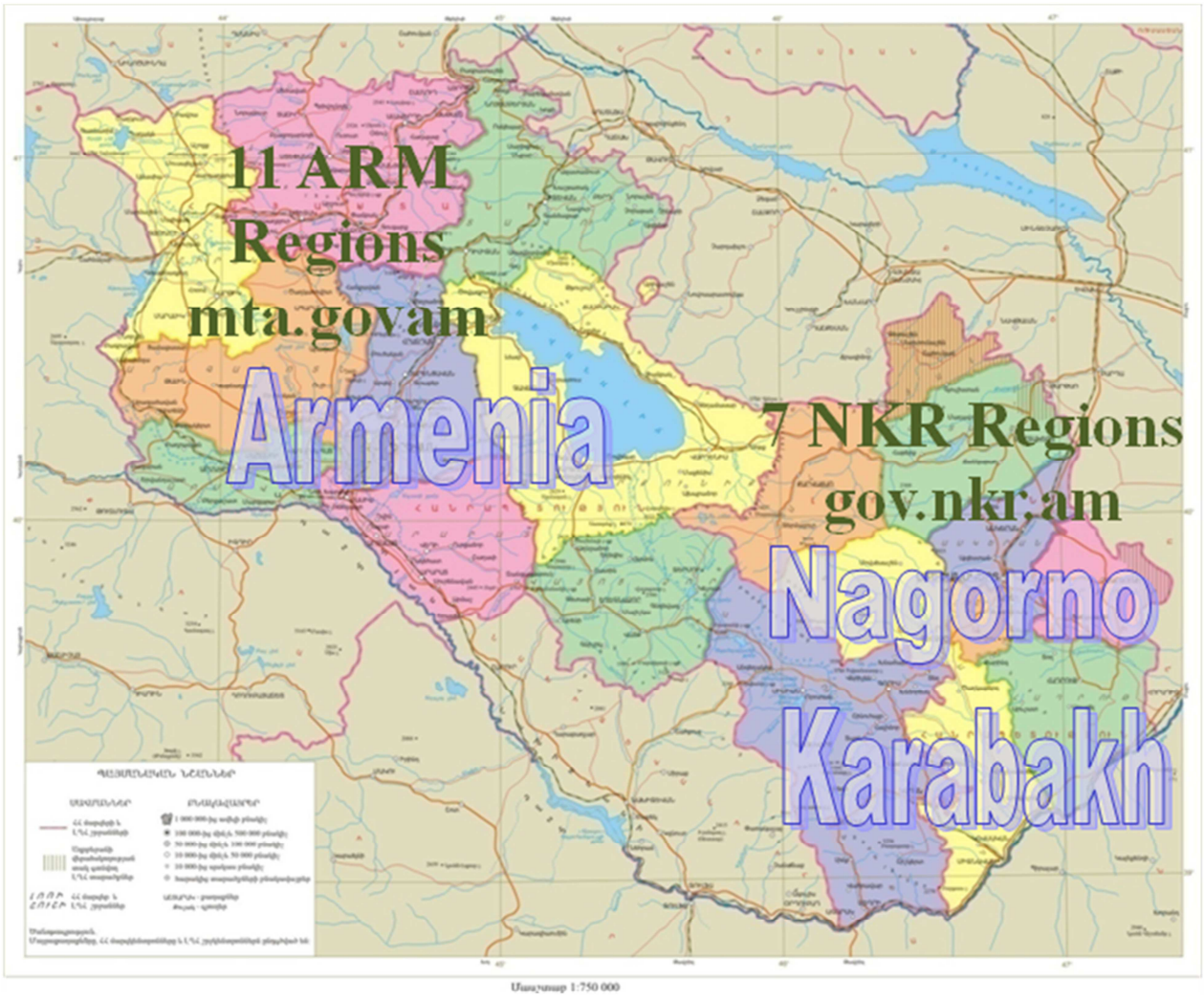
- Leadership as central role;
- Nature as hierarchy;
- Hierarchy to intercity migration;
- Centripetal and centrifugal forces;
- Hierarchy with innovation;
- Zipf's law happens with similar growths.

3. Materials and Methods

3.1. Study Area

Armenia (*Picture 5*) is located in the southern Caucasus and covers almost 10% of the Armenian upland (29,800 km^2).

Mainly, the military phase complies with theoretical and logic asymmetric conflicts during 1992-1994 over Nagorno-Karabakh with specific factors led to victory (Deriglazova and Minasyan, 2011). Nowadays, Nagorno-Karabakh Republic, i.e. Artsakh, (*Picture 5*) is a smaller (4400 km^2) autonomous area between Armenia and Azerbaijan. Armenia and Nagorno-Karabakh support diversity of landscapes with a range of species, due to their geographic position (Arakelyan and Parham, 2008). ARMSTAT (2015) represents eleven (11) Armenian areas and NKRSTAT (2015) presents seven (7) areas of Nagorno-Karabakh Republic as depicted in *Picture 5*.



Picture 5. *Map of 18 areas of Armenia and Nagorno-Karbakh Republic.*

3.2. Data Sets

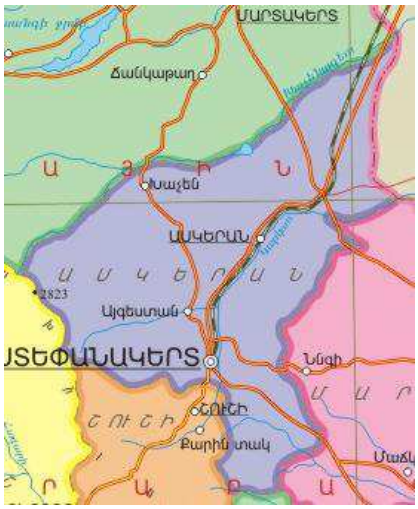
Data sets are retrieved from ARMSTAT (2015) and NKRSTAT (2015) in co-ordinance with 18 categories of Table 1 as per eleven (11) Armenian and seven (7) Nagorno-Karabakh areas further addressed in Table 3.

Table 3. *Armenian categories representation as per ministries and areas of Armenia and Nagorno-Karabakh Republics.*

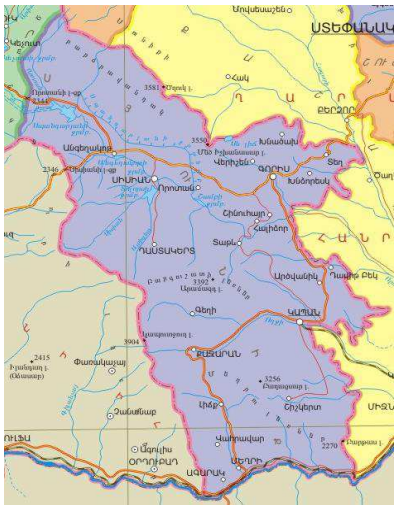
Num / Picture	Armenian categories	Ministries	Areas	Statistics
Society				
S_1 / Pic. 6	Demography (Population)	Ministry of Territorial Administration and Emergency Situations http://www.mta.gov.am	Askeran Marz http://www.armeniapedia.org/wiki/Rediscovering_Armenia_Guidebook-_Askeran_Region http://www.nkr.am/en/	NKRSTAT (2015)
S_2 / Pic. 7	Employment	Ministry of Labor and Social Affairs http://www.mlsa.am	Syunik Marz http://syunik.gov.am/	ARMSTAT (2015)
S_3 / Pic. 8	Education	Ministry of Education and Science http://www.edu.am	Shirak Marz http://shirak.gov.am/	ARMSTAT (2015)
S_4 / Pic. 9	Science	Ministry of Defense http://www.mil.am/	Lori Marz http://lori.gov.am/	ARMSTAT (2015)

Num / Picture	Armenian categories	Ministries	Areas	Statistics
S_5 / Pic. 10	Economic Activities	National Assembly of RA http://parliament.am/	Yerevan Marz http://mta.gov.am/en/	ARMSTAT (2015)
S_6 / Pic. 11	Transport and Communication	Ministry of Transport and Communication http://www.mtc.am	Vayots Dzor Marz http://vdzor.gov.am/	ARMSTAT (2015)
Economy				
E_1 / Pic. 12	Finances	Ministry of Finance	Qashatagh Marz http://www.minfin.am/	NKRSTAT (2015)
E_2 / Pic. 13	Living Conditions	Ministry of Culture http://www.mincult.am	Armavir Marz http://armavir.gov.am	ARMSTAT (2015)
E_3 / Pic. 14	Prices and Tariffs	Ministry of Urban Development http://www.mud.am/	Shushi Marz http://www.armeniapedia.org/wiki/Rediscovering_Armenia_Guidebook-_Shushi_Region http://www.nkr.am/en/	NKRSTAT (2015)
E_4 / Pic. 15	Agriculture	Ministry of Agriculture www.minagro.am/	Ararat Marz http://ararat.gov.am/	ARMSTAT (2015)
E_5 / Pic. 16	Industry	Ministry of Economy www.mineconomy.am	Aragatsotn Marz http://aragatsotn.gov.am/	ARMSTAT (2015)
E_6 / Pic. 17	Trade and Services	Ministry of Diaspora www.mindiaspora.am/ Ministry of Foreign Affairs http://www.mfa.am	Martuni Marz http://www.armeniapedia.org/wiki/Rediscovering_Armenia_Guidebook-_Martuni_Region http://www.nkr.am/en/	NKRTAT (2015)
Nature				
N_1 / Pic. 18	Land		Hadrut Marz http://www.armeniapedia.org/wiki/Rediscovering_Armenia_Guidebook-_Hadrut_Region http://www.nkr.am/en/	NKRTAT (2015)
N_2 / Pic. 19	Water	Ministry of Nature Protection http://www.mnp.am	Gegharkuniq Marz http://gegharkunik.gov.am/	ARMSTAT (2015)
N_3 / Pic. 20	Air		Martakert Marz http://www.armeniapedia.org/wiki/Rediscovering_Armenia_Guidebook-_Martakert_Region http://www.nkr.am/en/	NKRTAT (2015)
N_4 / Pic. 21	Biodiversity		Tavush Marz http://tavush.gov.am/	ARMSTAT (2015)
N_5 / Pic. 22	Energy	Ministry of Energy and Natural Resources www.minenergy.am/en	Kotayk Marz http://kotayk.gov.am/	ARMSTAT (2015)
N_6 / Pic. 23	Environ-mental Resources	Ministry of Nature Protection http://www.mnp.am	Shahumyan Marz http://www.nkr.am/en/	ARMSTAT (2015)

Source: Petrosyan (2015)



Picture 6. *S_1AskeranMarz.*

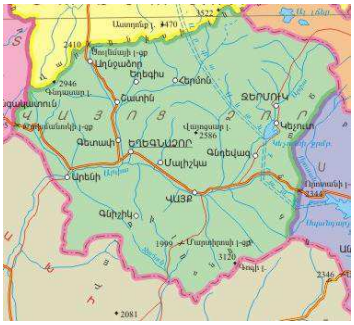


Picture 7. *S_2 Syunik Marz.*

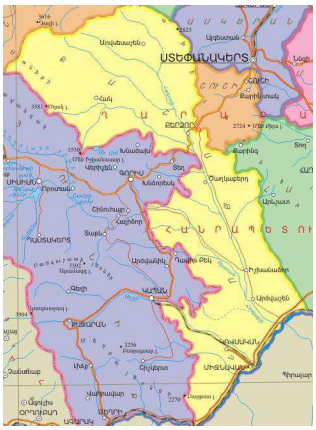
Picture 8. *S_3 Shirak Marz.*

Picture 9. *S_4 Lori Marz.*

Picture 10. *S_5 Yerevan Marz.*

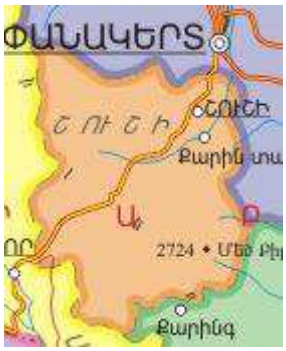


Picture 11. *S_6 Vayots Dzor Marz.*

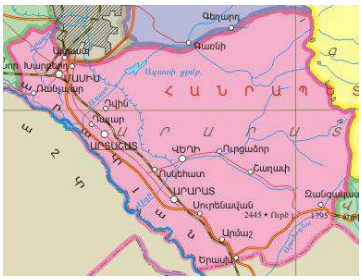


Picture 12. *E_1 Qashatagh Marz.*

Picture 13. *E_2 Armavir Marz.*

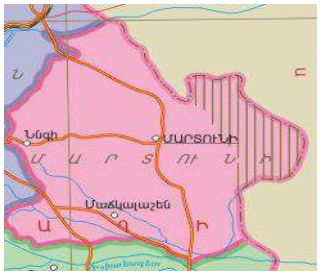


Picture 14. *E_3 Shushi Marz.*

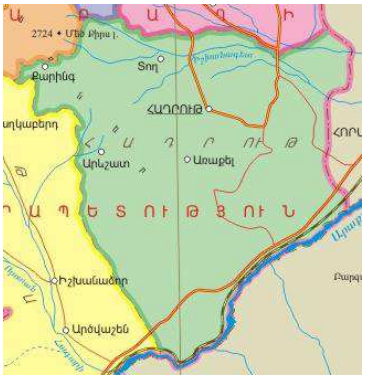


Picture 15. *E_4 Ararat Marz.*

Picture 16. *E_5 Aragatsotn Marz.*

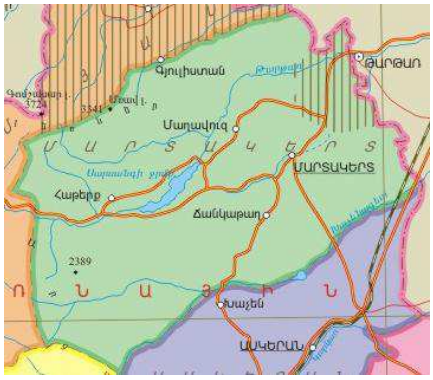


Picture 17. *E_6 Martuni Marz.*



Picture 18. *N_1 Hadrut Marz.*

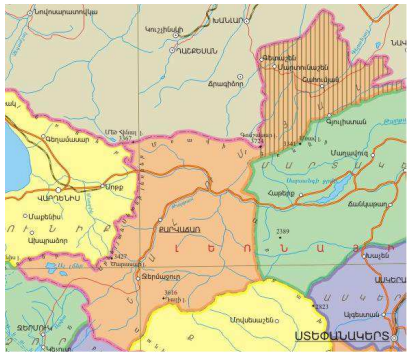
Picture 19. *N_2 Gegharkunik Marz.*



Picture 20. *N_3 Martakert Marz.*

Picture 21. *N_4 Tavush Marz.*

Picture 22. *N_5 Kotayk Marz.*



Picture 23. *N_6 Shahumyan Marz.*

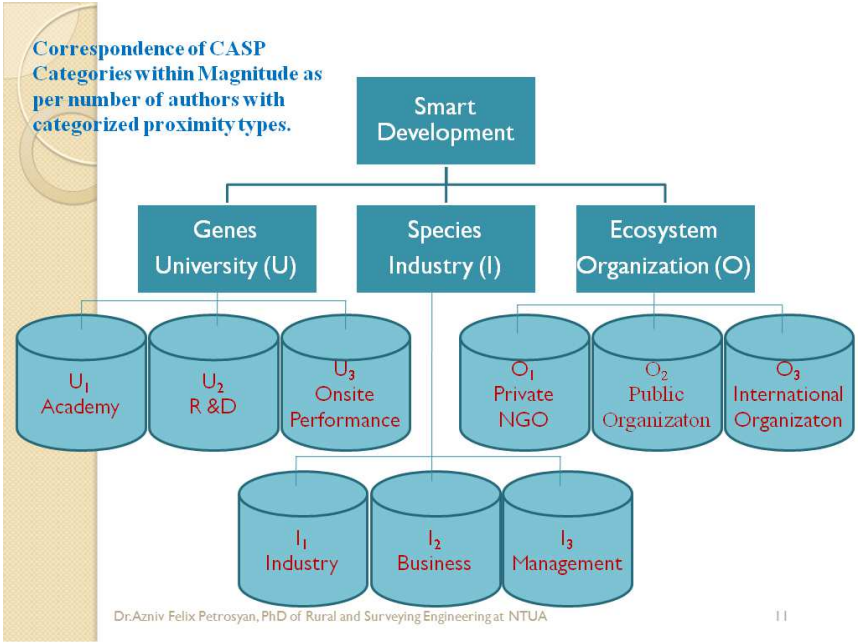
3.3. Methodology

The methodology of the current paper is described through the following steps:

1. Apply acquisition of geographic proximity types derived from Glaud and Torre (2005) in *Picture 24*:
   - University (U);
   - Industry (I);
   - Organization (O);
   - Application.
2. Categorize Proximity Types as per Biodiversity Concept (Petrosyan, 2005) in *Picture 24*:
   - Academy (U_1); Research & Development (R&D) (U_2); Onsite Performance (U_3);
   - Industry (I_1); Business (I_2); Management (I_3);
   - Private NGO (O_1); Public Organization (O_2); International Organization (O_3)
3. Correspondence of CASP Categories within Magnitude as per number of authors with categorized proximity types (*Table 4*);
4. Computation of number of authors with categorized proximity types as per CASP Categories within Magnitudes (*Table 4*);
5. Computation of Similarity Index and Similarity Percentage.
6. Selection of three (3) main CASP Categories within Magnitudes as per categorized proximity types.

4. Results

Hierarchic representation of smart development is depicted in *Picture 24* through University - Industry - Organization (UIO) approach as per biodiversity stages for composite apprising supportive progress (CASP). Correspondence and computation of CASP categories are shown in *Table 4* within each magnitude as per number of authors with proximity types.



Picture 24. *Graphical Representation of Smart Development.*

Table 4. *Representation of Smart Development Matrix through UIO and CASP.*

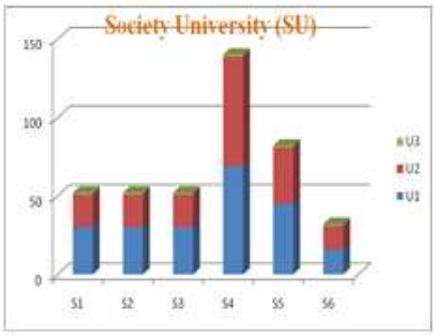
		Universities (U)			Industries (I)			Organizations (O)		
	CASP	**U_1**	**U_2**	**U_3**	**I_1**	**U_2**	**U_3**	**O_1**	**O_2**	**O_3**
Society (S)	S_1	30	21	1	21	2	1	15	1	34
	S_2	30	21	1	49	2	1	15	1	34
	S_3	30	21	1	5	2	1	15	1	29
	S_4	69	70	1	44	9	1	3	1	24
	S_5	45	36	1	2	2	1	15	1	29
	S_6	16	15	1	2	2	1	3	1	9
Economy (E)	E_1	29	19	1	2	2	1	24	1	29
	E_2	29	19	1	6	2	1	2	1	29
	E_3	18	17	1	13	2	1	15	1	17
	E_4	18	17	1	31	2	1	2	1	8
	E_5	18	17	1	11	13	1	2	1	9
	E_6	30	20	1	43	22	1	15	2	23
Nature (N)	N_1	17	16	1	1	3	1	2	1	6
	N_2	17	16	1	26	3	1	2	1	9
	N_3	17	16	1	1	10	1	2	1	9
	N_4	17	16	1	16	3	1	2	1	10
	N_5	16	14	1	14	3	1	2	1	9
	N_6	17	16	1	16	3	1	2	1	10

5. Discussions

Graphical representations of smart development matrix through UIO and CASP are shown in *Pictures 25, 26, 27* for Society (S) category; *Pictures 28, 29, 30* for Economy (E) category *Pictures 31, 32, 33* for Environment (N) category or otherwise *Pictures 25, 28, 31* for University (U); *Pictures 26, 29, 32* for Industry (I); *Pictures 27, 30, 33* for Organization (O) with detailed representation in *Table 5*.

Table 5. *Detailed references for graphical representation on UIO with CASP.*

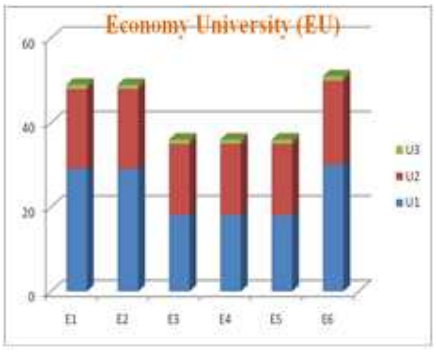
	University (U)		Industry (I)		Organization (O)	
	Num	**Picture**	**Num**	**Picture**	**Num**	**Picture**
Society (S)	SU	*Pic. 25*	SI	*Pic. 26*	SO	*Pic. 27*
Economy (E)	EU	*Pic. 28*	EI	*Pic. 29*	EO	*Pic. 30*
Environment (N)	NU	*Pic. 31*	NI	*Pic. 32*	NO	*Pic. 33*



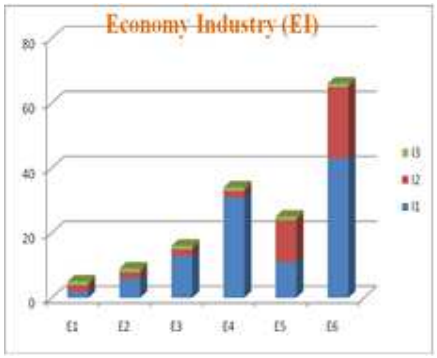
Picture 25. *Society University (SU).*

Picture 26. *Society Industry (SI).*

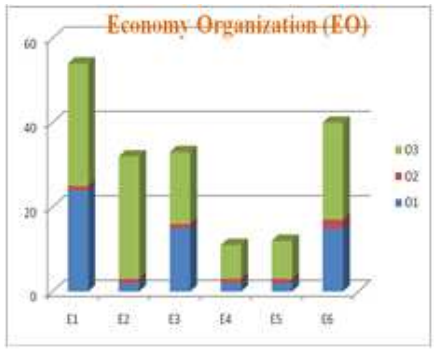
Picture 27. *Society Organization (SO).*



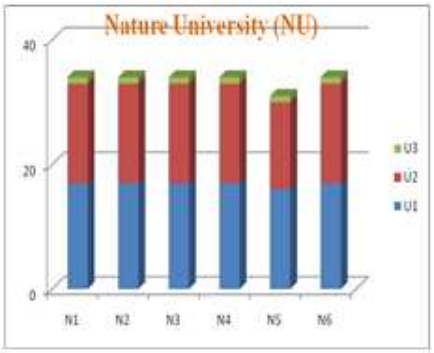
Picture 28. *Economy University (EU).*



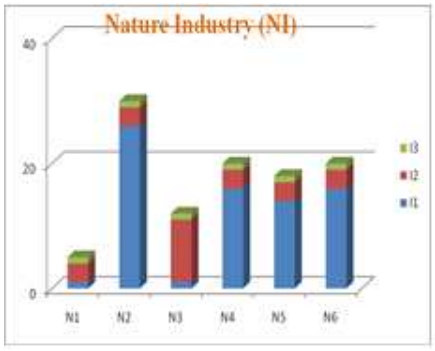
Picture 29. *Economy Industry (EI).*



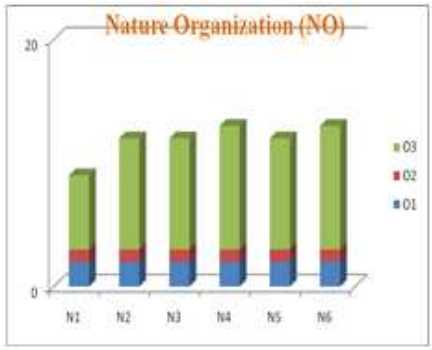
Picture 30. *Economy Organization (EO).*



Picture 31. *Nature University (NU).*



Picture 32. *Nature Industry (NI).*



Picture 33. *Nature Organization (NO).*

Three (3) main corresponding CASP Categories are demonstrated in *Table 6* within each magnitude as per number of authors with categorized proximity types.

Table 6. *Three (3) main corresponding categories with UIO and CASP.*

Society - University - SU	**Society - Industry - SI**	**Society - Organization - SO**
S_3 Knowledge in Practice	S_1 Humans	S_1 Humans
S_4 Space Science	S_2 Society Concerns	S_3 Knowledge in Practice
S_5 Political Performance	S_4 Space Science	S_5 Political Performance
Economy - University - EU	**Economy - Industry - EI**	**Economy - Organization - EO**
E_1 Banking Union	E_4 Agriculture	E_1 Banking Union
E_2 Human Standards	E_5 Industry	E_3 Production and Consumption
E_6 Tourism	E_6 Tourism	E_6 Tourism
Nature - University - NU	**Nature - Industry - NI**	**Nature - Organization - NO**
N_1 Land	N_2 Water	N_3 Air
N_4 Biodiversity	N_4 Biodiversity	N_4 Biodiversity
N_6 Environment	N_6 Environment	N_6 Environment

Interesting results from *Table 6* appear which are as follows:

- S_4 - Space Science category in Society (S) magnitude;
- E_6 - Tourism category in Economy (E) magnitude;
- N_4 - Biodiversity category in Environment (N) magnitude.

6. Actualization

Computation of Similarity Index is computed through Simple Matching Coefficient (SMC):

$$SMC = \frac{C_{ii} + C_{ij}}{\sum_{i=1}^{6}\sum_{j=1}^{3} C_{ij}}$$

Where C is cross-section CASP or Society - Economy - Environment, i.e. S-E-N with University - Industry - Organization, i.e. U - I - O, i - rows, j - columns.

The results of Simple Matching Coefficients are represented in *Table 7*.

Table 7. *Simple Matching Coefficients (SMC).*

		Universities (U)				Industries (I)				Organizations (O)			
	CASP	**U_1**	**U_2**	**U_3**		**I_1**	**I_2**	**I_3**		**O_1**	**O_2**	**O_3**	
Society (S)	S_1	0.12	0.05	0.08	0.05	0.16	0.02	0.15	0.02	0.07	0.15	0.21	0.07
	S_2	0.12	0.05	0.08	0.05	0.34	0.02	0.34	0.02	0.07	0.15	0.21	0.07
	S_3	0.12	0.05	0.08	0.05	0.05	0.02	0.04	0.02	0.07	0.13	0.19	0.07
	S_4	0.34	0.17	0.17	0.17	0.36	0.07	0.30	0.07	0.02	0.11	0.12	0.02
	S_5	0.20	0.09	0.11	0.09	0.03	0.02	0.02	0.02	0.07	0.13	0.19	0.07
	S_6	0.08	0.04	0.04	0.04	0.03	0.02	0.02	0.02	0.02	0.04	0.05	0.02
					0.46				0.17				0.31
	CASP	U_1	U_2	U_3		I_1	I_2	I_3		O_1	O_2	O_3	
Economy (E)	E1	0.19	0.08	0.12	0.08	0.03	0.02	0.02	0.02	0.14	0.16	0.29	0.14
	E2	0.19	0.08	0.12	0.08	0.05	0.02	0.05	0.02	0.02	0.16	0.17	0.02
	E3	0.14	0.07	0.07	0.07	0.10	0.02	0.09	0.02	0.09	0.10	0.18	0.09
	E4	0.14	0.07	0.07	0.07	0.21	0.02	0.21	0.02	0.02	0.05	0.05	0.02
	E5	0.14	0.07	0.07	0.07	0.15	0.09	0.08	0.08	0.02	0.05	0.06	0.02
	E_6	0.19	0.08	0.12	0.08	0.42	0.15	0.28	0.15	0.09	0.14	0.21	0.09
					0.45				0.30				0.37
	CASP	U_1	U_2	U_3		I_1	I_2	I_3		O_1	O_2	O_3	
Nature (N)	N_1	0.16	0.08	0.09	0.08	0.04	0.04	0.02	0.02	0.04	0.10	0.11	0.04
	N_2	0.16	0.08	0.09	0.08	0.28	0.04	0.26	0.04	0.04	0.14	0.15	0.04
	N_3	0.16	0.08	0.09	0.08	0.10	0.10	0.02	0.02	0.04	0.14	0.15	0.04
	N_4	0.16	0.08	0.09	0.08	0.18	0.04	0.16	0.04	0.04	0.15	0.17	0.04
	N_5	0.15	0.07	0.08	0.07	0.16	0.04	0.14	0.04	0.04	0.14	0.15	0.04
	N_6	0.16	0.08	0.09	0.08	0.18	0.04	0.16	0.04	0.04	0.15	0.17	0.04
					0.50				0.19				0.25

Further on, Percentage Similarity (PSIM) is computed as:

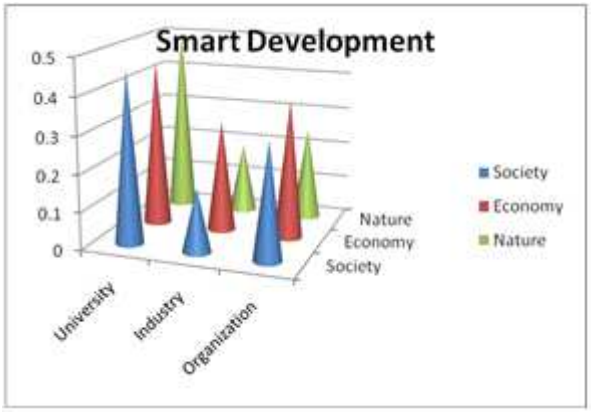
$$PSIM = \sum_{i=1}^{6} \min C_i$$

Where C is cross-section CASP or Society - Economy - Environment, i.e. S-E-N with University - Industry - Organization, i.e. U - I - O, i - rows.

The results of Percentage Similarity are represented in *Table 8*. The graph depiction of the smart development as results of PSIM is illustrated in *Picture 34*.

Table 8. *Percentage Similarity (PSIM).*

	University	**Industry**	**Organization**
Society	0.46	0.17	0.31
Economy	0.45	0.3	0.37
Nature	0.5	0.19	0.25



Picture 34. *Smart Development graph depiction.*

Picture 35. *Space Science use in Smart Development of Armenia.*

Percentage of Similarity (PSIM) as per Simple Matching Coefficients (SMC) shows the following structure as per appearance with smart development procedures:

1. University (U); 2. Organization (O); 3. Industry (I);
1. Nature (N); 2. Society (S); 3.Economy (E).

7. Conclusion

Armenian and Nagorno Karabakh, i.e. Artsakh area with Society (S), Economy (E), Nature (N) Magnitudes of CASP

has an approximation of 70% fit to CASP (Petrosyan, 2015). % of Similarities (PSIM) shows the weakness of Industrial Existence within Armenian Economy. Furthermore, Smart Development for Armenian CASP should be applied to gather Society (S) – University (U); Economy (E) – Industry (I); Environment (N) – Organization (O) using concept of biodiversity. Representation of Smart Development Matrix through UIO and CASP has the following aforementioned sequence:

S_4 – Space Science (*Picture 35*);
E_6 – Tourism;
N_4 – Biodiversity.

Finally, Smart Development with implementation of Armenian CASP and emphasis on Space Science in *Picture 35* has the next representative outcomes as per importance:

α. U – University; N – Nature; S_4 – Space Science
β. O – Organization; S – Society; E_6 – Tourism
γ. I – Industry; E – Economy; N_4 – Biodiversity

As it can be concluded, Space Science should be further developed as economic innovations in Armenia through use of Universities (U) and protection of Environment (N). Although, Armenian government tries to emphasize on Agriculture as a main leader in Armenian Economy, Tourism plays higher role in Armenian Economy with Society (S) prominence and Organizational (O) participations. Even though, our main emphasis is on industrial production, in reality Biodiversity concept plays an important role in combination of industrial economies, which should pay attention to biodiversity economics as an initial point for further smart development of composite appraising supportive progress (CASP).

Recommendation

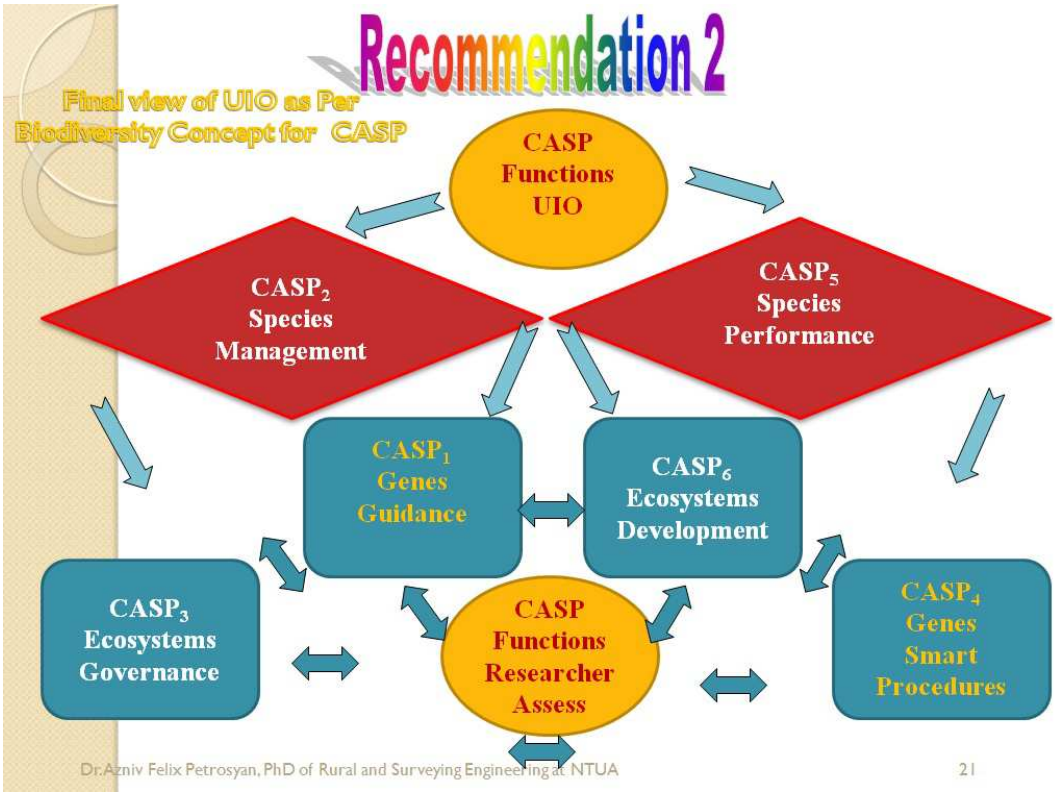
Three (3) types of Recommendation 1 is provided to construct Society (S) in *Picture 36*, Economy (E) in *Picture 37* and Environment (N) in *Picture 38* with emphasis on Biodiversity Concept two (2) & five (5) categories of each magnitude is presented as a species stages with control over one (1) & four (4) categories of each magnitude as for gene stages and three (3) & six (6) categories of each magnitude as for ecosystem stages.

Picture 36. *Recommendation for Society (S).*

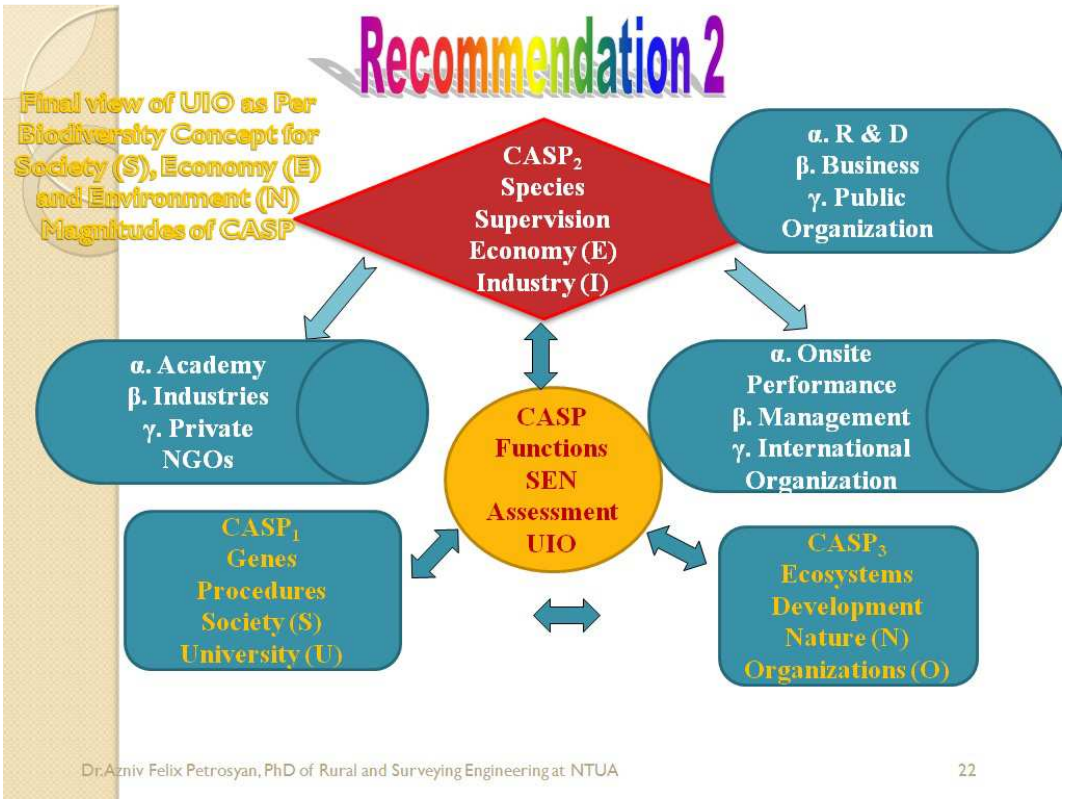
Picture 37. *Recommendation for Economy (E).*

Picture 38. *Recommendation for Environment (N).*

Final view of University (U) - Industry (I) - Organization (O) is exemplified in *Picture 39* as per biodiversity concept of CASP. Final view of University (U) - Industry (I) - Organization (O) is depicted in *Picture 40* as per biodiversity concept for Society (S), Economy (E) and Environment (N) Magnitudes of CASP.



Picture 39. *Final view of UIO as Per Biodiversity Concept for CASP.*



Picture 40. *Final view of UIO as SEN Magnitudes for CASP.*

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