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FOREWORD

It is with immense pleasure that I present Kruti, our in-house peer-reviewed research journal, a publication that reflects the institution's commitment to academic excellence, intellectual curiosity, and perseverance in the pursuit of knowledge.

After a gap of five years, I am particularly delighted to see the journal being revived and released once again. This renewed initiative by the present Kruti Committee of the Research Development Cell at Carmel College is both timely and commendable. It signifies a strengthened commitment to fostering a vibrant research culture within the institution and creating a meaningful platform for scholarly engagement.

The journal reflects the scholarly efforts of faculty members, researchers, and students. Their dedication and perseverance in expanding the frontiers of discipline-based knowledge are embodied in the pages of this publication. I congratulate the editorial team for their committed efforts in organizing a rigorous review process through external scholars and for meticulously compiling this volume. The contributions in this issue reflect authentic research characterized by methodological rigour and alignment with contemporary concerns.

Research is not merely an academic exercise; it is a powerful force that nurtures critical thinking, inspires innovation, and contributes to societal advancement. I therefore extend my sincere appreciation to all contributors whose work enriches this journal. I am confident that their research will not only advance knowledge but also inspire further inquiry, foster collaboration, and serve the wider academic community and beyond. The diverse range of papers included truly underscores the multidisciplinary and promising character of this publication.

As we move forward, I wish the Research Committee continued success in sustaining this valuable initiative and in upholding the highest standards of research, discovery, and academic integrity.

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Tiatrantlo Vinod ani Tiatr Machievele Vinodi Kolakar

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SARANSH: Tiatrachea 133 vorsanchea itihasant, tiatr machier veg-veglle vinodi kolakar yevun apli bhumika korun lokank hansoun gele. Thodde aiz sounsarachea podd'ddea add gele, zalear thodde tiatr machiek aplem yogdan dit asat. Tiatr machier namna zoddil'le vinodi kolakaram modem Joao Agostinho Fernandes, Anthony Mendes, Jacinto Vaz, Jephsis Hitler, Thomas Coogan, Champion Peter adi hanchem nanv aspavta. Toxech kolakar ani vinodi gitam gavpeam modem C. Alvares, M. Boyer, H. Britton adi kolakaranim lokanchem borench monoron'jon kelem. Tea kallar tannim 'comedyk' ek agllem-vegllem rup diun lokank pott futtosor hansoile. Tea kallavele tiatr borovpi, comedy ho tiatrachoch bhag mhunnon, comedy mull kothent zoddun ghetale. Adlea vinodi kolakaranchi sfurti ghevun tiatr machier zaite vinodi kolakar nirmann zaleat, punn 'comedychem' rup ani akar mat khoim tori sanddla oxem disunk laglam. Aiz zaitea tiatranim comedy choddxe 'side shows' zaleat ani mull kothek dhorinastana 'comedychich' ek veglli kotha tiatrant disunk laglea. Comedy tiatrache mull kothek dhorun vochunk zai zalear atanchea borovpeanim, adlea tiatr borovpeanche tiatr vachpachi goroz asa. Adlea vinodi kolakaranim 'clean comedy' korun lokank hansoile, punn aiz mat zaite vinodi kolakar pozddeponnachim, bhemoryadichim, double meaning axil'lim utram vaprun lokank hansovpacho proytn kortat.

Biz Utram: Tiatr, vinod, vinodi kolakar, machi, pozddeponn, bhemoryad.

I. PROSTAVNA

Tiatr kiteak zolmank ailo?

Tiatr zolmank yevche adim lokanche monoron'jon Zagorantlean ani Khell-antlean zatalem. Zagor choddxe Ut'tor Goyant sador zatale, zalear Dakxinn Goyant Khell vo fell sador zatale. Goykar jednam potta khatir Mumbai gele tednam tannim aplea sangatak Zagor ani Khellui vele. Vell gelo toso Zagorant ani Khellant pozddeponn ani bhemoriadichi vagnnuk bhitor sorli. Kaim kolakaranim he donui prokar boxttaile. Lokan Zagorak ani khellak vochpachem soddlem. Atam lokank kitem torem novem monoron'jon zai axil'lem. Ani kaim kallan Lucasin baban Goykarank monoron'jonachem sadon koxem tiatr dilo. Aiz kall bollanddlo toso tiatrantui kaim promannant pozoddponn bhitor sorta tem nodrek bhorta. Hem pozoddponn vo bemoriadichem uloup ani vagop tiatrantlea vinodant va 'comedy'nt' dixtti poddta. Zagorant pozoddponn bhitor sorlem dekhun lokanim vitteun zagor soddun dile. Tiatrachea vinodant va comedynt bhitor sorta tea pozoddponnank lagun tiatr urtole vo mortole ho mat proxnn asa?

Tiatrachi bandavoll

Tomazin bab Cardozo aplea eka lekhant ***"The History of Tiatr"*** hantunt oxem sangta- Boro tiatr machier haddttole zalear tin vostu chodd mhotvacheo- 1. Bori kotha. 2. Monbhulovnnim kantaram ani songit, ani 3. Tiatrantle 'Comedicho' sombond mull kothe kodden aspak zai.

Script (Likhann)

Tiatr borovpean 'Comedycho' sombond mull kothekodden dovorchoch poddta. Tednach khoro tiatr boroun yeta. Tiatrachi 'comedy'mull

kothek dhorun na zalear to tiatr zavunk xokonam.

Comedy Tiatracho bhag

'Comedy' ho tiatracho mhotvacho bhag asa. Tiatrache kothent 'Comedycho' sombond nastana tiatrak yes mellunk xokonam. Khoimchoi yesosvi tiatr ghe. Kothent 'Comedy' favo tea promannant ani zai titlich zoddlea dekhunuch te tiatr yesosvi zaleat. *'Comedy is part and parcel of the tiatr'*. 'Comedy' hi mull kothe poros veglli nhoi. Pai tiatrist Joao Agostinho dhorun, Alexin de Candolim, Minguel Rod, C. Alvares, M. Boyer, Prem Kumar, J.P Souzalin, Remy Colaco, Nelson Afonso, John Claro adi hannim aplea borpavollinim Comedy unchlea panvddear dovorli ani ti tiatr kothent zullun ghetli. (Ek ul'lekh)

Aichea choddxea tiatranim Comedy mull kothek dhorun asonam, punn side shows koxi comedy ghaltat ani te comedychi ek veglli kotha dakhoitat. Tiatrache mull kothent, comedy hi ek veglli kotha toyar kortat. Oslea tiatranim comedian ek vo don entry marun mull patramkodden sonvad kortat ani apli comedy mull kothek zullun asa hem dakhoitat. Punn ek vo don entry marleo mhunnon comedy mull kothecho bhag zainam. Mull kothek dhorun axil'li comedy adlea tiatranim, Kala Academy-chea spordhechea tiatranim ani aichea kaim mezkea tiatranim dixtti poddta. Dekh diumchi zalear, adlea kalla velea C. Alvaresachea "Kedna Udetolo to Dis" hea tiatrant kothent bhitor axil'li comedy dista.

Kombo Kaitan: Bhattkara hanv jiv ditam. Hea sounsarant anik kiteim kelar hanv ravonam.
Bhattkar: Kitem zalam re?
Kombo Kaitan: Hanv bazarant thavn ghara ietana soglle mhaka kombo Kaitan mhunn chavoitat. Hanvem kednach tujem ek utor ghevunk na ani he mhaka chavoitele? Hanv kombo koso distam? Mudlakuch hanv motto dekhun konnui cheddum mhoje lagim kazar zainam. Ani mhaka kombo mhonnttat mhunn cheddvank gomot zalear tim anik mhaka lagim dovortat?
Bhattkar: Are Kaitan te tuka chavoitat zalear tunvem chavonk favonam. Tum chavotai dekhun te tuka odik chavoitat.
Kombo Kaitan: Na Bhattkara, tum kiteim sang, hanv jiv ditolonch. Hanv Devacho itlo mog kortam, sumanak ek pavtt kumsar zatam…Bhiknnank ani zol'leank pasun dukhoinam…hanv itlo nitoll nirmoll zaunui voilean mhaka kombo Kaitan mhonnttat, tedna hea sounsarant hanv kiteak mhunn jivo ravum? Hanv kombo? Mhaka kitem xenkrem asa?

He dekhint Kombo Kaitan (Comedian) ani Bhattkar hancho sonvad mull kothek dhorun asa. Tiatrachem veglleponn ani khaxeleponn samballun dovortole zalear Comedyk favo tem mhotv divun ticho aspav kothe bhitoruch zavpak zai. Atanchea kallar lokank hansovpak tiatr borovpi boroch 'Jokes-ancho' vapor kortat tem dista. Borovpean svota apli comedy toyar korpak bhor ghevpak zai. Tednach tiatrant bori ani dorzedar comedy yevpak pavtoli.

Tiatrantlo vinod

Tiatrantlo vinod don bhaganim vanttunk zata: 1. **Mull Kothentlo vinod**, ani 2. **Vinodi kantaram.**

Mull Kothentlo Vinod:

Tiatrant axil'lea vinodacho sombond mull kothekodden aspak zai. Vinod mull kothek dhorun fuddem veta tednach tiatr purnn zata. Tiatrantlea vinodi patracho aspav mull kothent axil'lea patramkodden zata. Vinodi patramcho aspav chodd korun ghorant kuzner, xezari, bhav, titiv, timai, adi oso zata. Tiatr mollar Anthony Mendes, Jacinto Vaz, Champion Peter, Jephsis Hitler hea famad ani lokpriy vinodi kolakaranim machi soboili ani lokank aplea vinodantlean hansoun-hansoun tanchem monoron'jon kelem.

Namneche vinodi kolakar:

Joao Agostinho Fernandes

Joao Agostinho Fernandes hankam Pai Tiatrist mhunn vollkhotat. Tannem sumar 30 voir tiatr boroun tiatr machiek mhotvachem yogdan dil'lem asa. Taka 'Comic Fernandes' vo 'Comic Joao' mhunttale oso ul'lekh Tiatr Academy-n uzvaddailolea *'125th Anniversary Commemorative Volume'* hea ankant mellta. Dekhun tannem tiatranim vinodi kolakarachi bhumika kelea hem sid'dh zata. Tache uprant vinodi kolakar mhunn namna zoddli ti fokot kaim kolakaranim:

Anthony Mendes (28/12/1920-21/03/1964)

Anthony Mendes hacho mull ganv Moddganv Borda. Tachem xikop St. Theresa's High School, Mumbai hangam zalem. Taka lhanponnant sakun kantaram gavpak ani bhumika korpak avoddtali. Taka Joao Agostinho Fernandesan aplea tiatrant bhumika korunk sondhi dili ani tednam sakun tannem kednach fatt vollun polleli na. To mukhar vochot ravlo ani lokanchea avddicho zalo. Tea kallar tannem No.1 Comedian mhunn namna zoddli. Tannem zaitim comedy kantaram rochun gailim. Comic kantaram gaitanam to itlo moddttalo ki lokanim taka "spring man" ho mukutt dilo. Comedy kortanam tache dolle gunvtale, kudd moddttali, tantuntleanuch to lokank ek utor uloinastanam hansoun soddtalo, ani tachea tonddantlean jednam vinodi sonvad bhair sortale tednam lok pottak dhorun sud'dha hanstat te distale. *Tarvotti nouro, taxi, wonderful child* him tachim gazil'lim kantaram aiz pasun Radiocher sador zatat. Punn durdoivan 43 vorsanche pirayeruch taka moronn ailem ani tachea jivitacho podd'ddo dhamplo.

Jacinto Vaz (27/04/1918- 30/04/1993)

Jacint Vaz ganvan Mandurcho. Xikxonna khatir te Mumbai gele, ani thoim vaddttam-vaddttam taka gavpachi ani Tiatrant bhumika korpachi goddi lagli. Ernest Rebello-chea *"Hanv patki"* hea tiatrantlean tannem tiatr machier pavl dovorlem. Alexino De Candolim, hannem tache bhitor axil'lo Comedycho gunn pollelo ani *"Bhasailolo nouro"* hea aplea tiatrant taka mukhel vinodi kolakar mhunn bhumika dili. Tannem aple bhumikek purai nyay dilo ani tednam thaun moro porian Jacint Vaz ek vinodi kolakar mhunn boroch famad zalo. To vinod kortalo tem polloun, tache bhitoruch vinodachem banddar bhoril'lem asa oxem distalem. Taka lokank hansovpak utranchi pasun goroz naka axil'li. To fokt vinodi bhumikent machier dislearuch puro zatalem. Lok pott bor hanstale. To choddso vinodi bhumika kortanam bebdeacho bhes gheun yetalo ani lokank pott futtosor hansoitalo. (Tannem svota aple tiatr boroun tantunt Vinodi bhumika ani vinodi kantaraim gaileant. Tachea kaim tiatranchim nanvam oxim: *Bodmas, Ghorvali, Bandwala, Maim ani Sun, Bombay Dekho, adi.* Tannem tea kallavelea Joao

Agostinho Fernandes, Ernest Rebello, Souzalin, Alexin De Candolim, Minguel Rod, C. Alvares adi famad digdorxpeanchea tiatranim bhumika kelea ani aple vinodi bhumikentlean lokank tiatr pollounk voddun haddleat). Tannem zaitim kantaram rochlim jim aiz meren aikunk mellttat. Dekhik- *Bailank lagon, Bhair kaddlo dovo, Mottorcar, Rock n roll* adi.

Jednam Jacint Vazan tiataranim Comedy korunk survat keli, tednam Anthony Mendes ho No. 1 ani unchlea dorzeacho comedian aslo. Taka lagtolo ani dusro comedian konnuch naslo. Punn 1964 vorsak, 43 vorsache pirayeruch Anthony Mendesak moronn ailem. Tachea uprant tiatr machier khali zal'lea No. 1 Comedianacho zago bhorun kaddlo to Jacint Vazan. Navosto Tiartist Cyriaco Dias oxem sangta- *Boyeran pasun Jacinto Vazak soglleavon vhodd comedian mhunn manlo.*

1979-1980 hea vorsak Jacint Vazak tannem tiatrak dil'lea yogdana khatir Goy Raj'yacho sonskrutik puroskar bhettoilo. Ho puroskar bhettoitanam tednacho Goycho Rajpal Pratapsingh Gill hannem Jacint Vazak *"Konknni Machiecho Charlie Chaplin"* ho mukutt dilo. Tannem aple vinodi bhumikentlean ani Vinodi kantarantlean lokanchem borench monoronjon kelem, ani ho soglleank hansovpi kolakar Abrilache 30 tarker 1993 vorsa soglleank roddoun sounsarache machiecho nirop ghetlo.

Thomas Coogan

Thomas Coogan hachem purai nanv Joao Thomas Fernandes. Charlie Chaplin-a vangdda filmanim distolo anik ek American kolakar Jackie Coogan hachi prernna gheun tannem Coogan hem nanv ghetlem. Tanchi comedy polloun takai comedian zaumchem oxem dislem. Survatek tannem zaitim kantaram boroilim tantunt comic kantaranchoi aspav asa. Boro kantorist koso to tiatrant bhitor sorlo tednam tannem survatek dhaktti-dhaktti bhumika korun, uprant mukhel kolakar to zavunk pavlo. Taka tiatr digdorxok koslie bhumika ditale ani to ti bhes bori kortalo. Kaim tiatranim tannem vinodi kalakar mhunn bhumika kelea.

Champion Peter (21/07/1932- 27/11/1965)

Cortalim ganvcho Thomas Aguelino Fernandes hankam tiatr machier Champion Peter hea nanvan vollkhotat. Tannem tiatranim Vinodi kolakar mhunn bhumika korun namna zoddli. Zori tor Hinduchi bhumika korpak kolakar zai poddttalo tor ti bhumika Champion Peterak vetali. Vinodi bhumika korpa bhair taka comic kantaram gavunk avoddttalem. To angan sarko barik axil'lean sarko comic koso distalo. To aplem comic kantar sompoitanam "Amen" mhunnttalo. Pirayechea 33 vorsancher taka moronn ailem.

Jephsis Hitler (05/06/1925- 31/03/1999)

Jose Francisco Leitao haka tiatr machier Jephsis Hitler hea nanvan vollkhotale. Tacho ganv Tolleaband, Chinchinim. Tannem Tiatrant Comedy korpak survat keli tednam Jephsis Hitler hem nanv ghetlem. Jephsis hem nanv tachea nanvantlea okxorantlean ailam. To bhumika kortanam Hitlera sarkeo mixio dovortalo dekhun lokanim takam Hitler hea nanvan pacharlo. Minguel Rodan taka aplea *'Intruz vo Carnaval'* hea tiatrant nachunk Mumbai velo. Thoim comedy bhumika korun tannem unchlea dorzeacho comedian mhunn namna zoddli. To itlo lokpriy zalo ki tachi comedy pollounk lok tiatrak yetale ani pott bhor hansun ghora portotale. Tache Comedyk polloun Comedian Jacint Vazan pasun taka

"Kunhad ani Mana" hea aplea tiatrant comedian mhunn ghetlo. Ho tiatr 1957 vorsak Afrikek zal'lo. Don palkache famad comedian sangatak yevun tannim lokanchem kalliz jikhun ghetlem.

Titta Preto

Tita Preto ganvan Aldoncho. Tachem khorem nanv Tito Mathias Estaphania Preto. Bhurge pirayeruch te Dhobi Talao gele. Thoim tiatrak gel'le kodden tannem aplea ganv bhav J.P Souzalin ani Alfred Rose hankam tiatrant bhumika kortanam pollele ani tache bhitor tiatrant nachpachi umed zagi zali. Tannem tiatrant bhitor sorun vhoddlea- vhoddlea tiatristanchea tiatranim bhag ghetlo. Zoxe Saib Rocha, Souzalin, C. Alvares, Boyer adi. Tannem "Ace" comedian mhunn namna zoddli. Tannem kaim pavttti H. Britona sangatak bailecho bhes gheun kantaram gaileant ani lokank borech hansoileat. Tannem 'Kantar mhojem', 'Adlea tempar', 'I love you' adi comedy kantaram gailim ani lokanchem monoron'jon kelem.

Vinodi kantaram:

Tiatrant axil'lea vinodi kantarantleanui lokanchem monoron'jon zata. Him kantaram mat tiatrache mull kothek dhorun asonant. Tancho vixoi tiatrache kothe poros vegllo asta. Tiatrant vinodi bhumika ani kantaram gavpi kaim namneche kolakar oxe:

C. Alvares (1/08/1920- 27/02/1999)

Santana Francisco Alvares ganvan Saliganvcho. Tache familik "Fokanneager" mhunn vollkhotale. Aplea familichea hea nanvam pormonnem 7 vorsancho astanam C. Alvaresan aplea bapul bhav Alvares Champion hannem boroilolim Comedy kantaram gavpak survat keli. Toxench tannem ganvche machier vinodi bhumika keleo. Uprant xikxonna khatir te Mumbai gele ani thoim Tiatrachea mogan poddle ani tiatr machier dispak lagle. Apnnem svota boroilolea *'Nirddukai'* hea tiatrant tannem mukhel vinodi bhumika keli ani ek boro comedian mhunn lokam mukhar ailo. Tannem comic kantaram gailim ani lokanchem borench monoronj'jon kelem. Tannem zaitim 'Duets' kantaram gailim tim comic svarupachim aslim, dekhik- 'Ponk-Ponk', 'Bikunn khata', 'Dotor ani kuzner' adi. Uprant comedy bhumika korpachi soddun tannem tiatranim mukhel kolakar mhunn bhumika korpak survat keli.

M. Boyer (11/10/1930- 30/05/2009)

Tannem sumar 1000 voir kantaram boroilim ani gailim. Tantuntlim kitlimxinch kantaram comic svarupachim aslim. "Adim ani Atam', 'Kombi, bokddi, mazor', '2nd ghov ready' adi him tachim kantaram. Tachea kantarank lagun director taka sodunk bhonvtale ani aplea tiatranim kantaram gavpak amontronn ditale. Tachea mornna uprant Goa Today 2009 hatunt Joe Dsouza hannem uzvaddailolea lekhant *"The mesmerising magician of Konkani Tiatr"* Boyeracho put Sebastian aplea bapai vixim oxem sangta-"To khoimchea vellar vinod korun amkam hansoitalo". Hache velean tache bhitoruch comedy asli ani ti fokot tiatrantuch nhoi punn ghorant pasun bhair yetali hem spoxtt zata. Sorgest Boneventure De Pietro, hannem Boyera vixim oxem boroun dovorlam- Boyer tiatrant aslear don tori kantaram mhunnttalo. Tantuntlem ek Kantar Comedy astalench. Tachea comic kantaram udexim tannem lokank tiatrak oddle. 1981 vorsak De Pietrochea *"Dunvor"* hea tiatrant Boyeran mukhel vinodi kolakar mhunn kam kelem ani lokank borech hansoile. Tache vinodi bhumikent tannem

pozddeponnacho kedanch sangat ghetlo na. Comedy pozddeponn nastanam tiatrant sador korunk zata hem tannem dakoilem. Tannem comedy kortanam bemoryadichi bhas vaprun kednach vinod kelo na. Tachi comedy sarki clean vo nitoll comedy asli. Lok sodanch vichartalo- tiatrant Boyer asa mure? Dekhun Boyer asa tea tiatrak tachim comedy kantaram aikunk upatt lok yetale.

H. Britton (16/10/1935- 24/09/2009)

Agassaim ganvant zolmololo Herminigildo Camilo hankam tiatr machier H. Britton hea nanvan vollkhotat. To choddso bail nheson kantaram gaitalo. Dekhun taka the preety lady of konknni stage oxem pachartale. Tannem bail nheson zaitim comic kantaram gailim ani namna zoddli. To boro kantaram rochpi aslo. "Bendra festak', 'Bus conductor', 'Pandu Lampianv' adi comic kantaram gailim. Tachea kantarachea ghoddpant sodanch vinod distalo dekhun tachim kantaram chodd lokpriy zatalim. Tannem 'Jivit Kuwettchem', 'Mogan poddtoch' adi tiatr rochle.

Kala Academy Tiatr Spordhentlo vinod

Kala Academychea tiatr sortik aiz 50 vorsam bhorlim. Nema pormonnem hea tiatr sortintintlea tiatrantli Comedy mull kothek zoddun asta. Pozddim utram comedynt va kothent vaporchim nhoi osoi nem asa. Dekhun sortintlea tiatrantlo vinod aiz pasun xudh'h asa. Hacho xrey Kala Academyk veta. He sortintlean bore vinodi kolakar mhunn aiz namnek pavil'le Com. Alexin De Morjim, Com. 64, Com. Mathew Dsouza adi.

Aiche vinodi kolakar

Adlea vinodi kolakaranchi sfurti ghevun tiatr machier zaite nove vinodi kolakar nirmann zale. Zoxe- Prince Jacob, Humbert, Com. Dominic, Com. Luis Bachan, Com. Ben Evangelisto, Com. Agostin, Com. Janet, Com. Joana, Sorgest Com. Selvy, Com. Ambe, Com. John Dsilva, Com. Jesus, Com. Nato, Com. Anita, Com. Sally adi.

Nixkorx:

Famad Comedy gitam gavpi, Boyeracho ul'lekh korun Tomazin bab Cardoz 'Goa Today', hea masikacher Boyera vixim ayil'lea eka lekhant oxem mhunntta- prekxokam modem vinod nirmann korche khatir tannem machier pozddeponnacho adar kednach ghetlo na. Sorgest D' Pietro Boyera vixim eka lekhant oso udgarlo- bailancher bemoryadiche tomnne vo fokannam marun Boyeran kednach vinod kelo na.

Aiz vinodi kolakar machier distat, punn tiatr machier, Kala Academy Spordhentle tiatr soddle tor, choddxea atanchea tiatranim, adle bhaxen comedy mat disonam oxem Tomazino bab Cardoz sangta. 'Rostad', 'Padd poddlolo' adi oxim utram comedy kolakarachea tonddantlean aikunk melltat. Choddxea vevsahik tiatranim side shows comedy zalea. He comedycho mull kothekodden kosloch sombond disonam. Zalear oslea sadorikornnak tiatr mhunncho vo na hovui proxnn asa.

Dusrem mhunnllear Tiatrant side shows comedy ghaltat tednam ek proxnn poddta-aichea borovpeank comedy mull kothek dhorun borovpak tank asa vo na? Anik ek gozal sangpachi zalear, atanchea vevsahik tiatranim comedyn ek vegllench rup ghetlam. Comedynt pozoddponn bhitor sorlam, pozddim ani burxim utram aileant, don orthachim utram (Double meaning words), bemoryadichem vagop ani nhesop disonk laglam, dadle goroz nastanam bailanche kopdde ghalun, bailanche kuddicher

kelolim fokannam tiatranim bhitor sorleant. Adlea kallar zagorant pozddeponn bhitor sorlem dekhun lokan vitteun zagorak vospachem soddun diun Tiatr hea novea prokaran zolm ghetil'lo. Aiz tiatrant pozddeponn ailear tiatr jivo urtolo vo mortolo ho mat proxnn asa. Tiatr jivo urtolo zalear tiatrantli comedy tiatrache mull kothek dhorun aschi ani xud'dh nitoll, nivoll comedy aschi.

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गोमंतकीय नाटक में नांदी

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सारांश: गोवा के लोकसाहित्य में, 'नाटक' एक महत्वपूर्ण स्थान रखता है, खासकर गोवा के गावों में जहां देवी देवताओं के मंदिर है । वार्षिक उत्सव के दौरान या फिर मूर्ति स्थापन दिवस या वर्धापन दिन पर सारे गाववाले एकसाथ मिलकर 5 या 7 रातों तक भव्य नाटकों का आयोजन करते है । नाटकों के कई प्रकार हमे गोवा के देवस्थानप्राकार में देखने को मिलते है ,जैसे दशावतार पेरनेम ,बीचोली ,सत्तरी आदि में देखने को मिलते है । संगीत नाटक की परंपरा का जन्म भी इसी गोवा की भूमि में हुआ है । व्यंग भरे नाटक या विनोदी नाटक देखना आज की पीढ़ी ज्यादा पसंद करती है। नाटक शुरू होने से पहले एक पारंपरिक गीत, वाद्यों के साथ सभी कलाकार परदे के पीछे गाते है,जिसे 'नांदी' कहते है । लोगों की यह मान्यता है, की यह नाट्य देवता नटराज को प्रसन्न करने के लिए गाया जाता है । गाव देवता के परिसर में वार्षिक उत्सव के दौरान, इस नांदी के द्वारा सभी नमन या प्रार्थना करते है की उत्सव बेहतरीन तरिके से सम्पन्न हो । हर परिसर की नांदी अलग होती है। इसके कई प्रकार हमे गोवा राज्य में दिखाई देते है । हम इस शोध पत्र द्वारा उनको जानने और समझने का प्रयास करेंगे । गोवा की समृद्ध लोकसंकृति इन पारंपरिक नांदी गीतों में झलकती है । गोवा के अलग-अलग पाँच नांदीयों का विश्लेषण करना हमारे शोध पत्र का उद्देश होगा ।

मुख्य शब्द: नांदी, लोकसंकृति, संगीत नाटक की परंपरा, लोकसाहित्य, नटराज, देवस्थानप्राकार, दशावतार, नाटक

I. परिचय

गोमांतकिय लोकपरंपरा में नाटक का स्थान :

जब हम गोवा प्रदेश की बात करते है, तो हमारी नजर में उसका प्राकृतिक सौदर्य, हरे भरे पहाड़, नदिया, समुद्रकिनारे, फूलपोंधे आ जाते है । पर इसके साथ ही यहाँ पर विविध कला का सृजन और उसकी साधना हमे बड़े पैमाने पर नजर आती है । गोवा के लोकसाहित्य और लोकपरंपरा में 'नाटक', एक महत्वपूर्ण स्थान रखता है, खासकर गोवा के गावों में जहां देवी देवताओं के मंदिर है । वार्षिक उत्सव के दौरान या फिर मूर्ति स्थापन या वर्धपन दिन जैसे तिथि पर कई नाटकों का आयोजन आज भी गाव-गाव में किया जाता है । नाटक की शुरुवात सूत्रधार तथा साथियों के साथ अनेक वाद्ययन्त्र बजाकर एक गीत सुनाया जाता जिसे 'नांदी' कहते है ।

नांदी की संकल्पना :

नाटक के प्रारंभ में इष्ट देवता को नमन करने अथवा प्रार्थना करते वक्त जो श्लोक सूत्रधार सुनाते है, इसे सामान्य रूप से नांदी कहा जाता है । वस्तुतः यह पूर्वरंग नाम से पूजा विधि का

एक भाग है । भरतमुनि के नाट्यशास्त्र के पाचवे अध्याय में भरत ने इस पूजा विधि का वर्णन किया है, इस विधि से नाटक प्रस्तुत करनेवालों का संबंध नहीं है, केवल सूत्रधार अपने सहायकों सह वह विधि पालन करता है । नांदी का पठन करके वह रंगभूमि से विदा लेता है ।[1]

नांदी की व्याख्या भरतमुनि ने इस प्रकार की है

आशीर्वचनसंयुक्ता नित्यं यस्मात् प्रयुज्यते
देव द्विजनुपादिना तस्मान्न् न्दीती संज्ञता ॥
(ना. शा . ५ .२४)[2]

अर्थ : जिस अर्थ से नाट्यप्रयोग की शुरुआत देव, ब्राह्मण वा राजे के आशीर्वचन से युक्त है, उसी अर्थ से उसे नांदी ऐसी संज्ञा दी गई है।

नांदी की संरचना :

नांदी आमतौर पर आठ या बारह पद की होती है , और सूत्रधार उसे मध्यम स्वर में गाता है, नांदी का आशय होता है , सभी देव , ब्राह्मण को नमस्कार हो, गो ब्राह्मण का कल्याण हो । राजा सुखी और प्रजा भी सुखी हो, राष्ट्र का उत्कर्ष हो । श्रोता और नाटककार दोनों को यश मिले, इस पूजा से सभी देवता संतुष्ट हो । भारतीय नाट्य परंपरा में नाटक का स्थान बहुत ऊंचा है, उसे पचंम वेद भी कहा गया है । कुछ विद्वानों का मत है, की नाटक एक यज्ञ है , और नांदी उसमे समर्पित होनेवाली समीधा है । भारत में नाटक और नांदी की शुरुआत तो आदिकाल से दिखायी पड़ती है जहां संस्कृत नाटक खेले जाते थे ।

भारतीय रंगमंच पर कवि कालिदास, भास, शुद्रक , भवभूति जैस महान नाटककार हुए, जिन्होंने बहुत बेहतरीन नाटक लिखे ।

गोमंतभूमि में नाटक का उद्भव और विकास:

गोवा में संगीत नाटक परंपरा में सबसे पहला नाम जिनका लिया जाता है वे है कृष्ण भट बांदकर महाराज (डोंगरी - गोवा), जिन्होंने पहला संगीत नाटक लिखा, श्री रामनवमी उत्सव के दौरान जिसका नाम था , " शुक -रंभा संवाद" इस तरह से संगीत नाटक परंपरा की शुरुवात हुई ।

अगर गोमन्तक राज्य में नाट्य परंपरा हम देखे तो, हमे नांदी के मुख्यतः दो प्रकार दिखायी देते है

1. पारंपरिक देवस्थान की नांदी
2. व्यावसायिक नाटक की नांदी

पारंपरिक देवस्थान की नांदी में विविधता

जो पहला प्रकार है वह गाव में जहां मंदिर की स्थापना हुई है , वहाँ पायी जाती है । इसकी खासियत यह है ये हर वर्ष पीढी दर पीढ़ी वार्षिक

उत्सव में यही नांदी हर वर्ष दोहराते है । नांदी सुनने और सुनाने में छोटे -बड़े सभी उम्र के लोगों में काफी उत्साह दिखायी देता है । यह समाज के विविध स्तरों के लोगों को जोड़ने का कार्य करती है । साथ ही लोगोंमे शास्त्रीय संगीत के विविध राग, आलाप, आरोह -अवरोह का ज्ञान और रुचि बढ़ाने में मदत करती है । नांदी गायन के कारण पुरानी पीढ़ी के साथ नई पीढ़ी का संगम देखा जा सकता है । लोकपरंपरा को जीवित रखने और कायम करने में इसका बहुमूल्य योगदान है । नांदी के अंतरंग में हमे पावित्रय, वृति गांभीर्य दिखायी देता है ।

नांदी उत्सव के दौरान, हमेशा रंगमंच पर नाटक के पहले गाई जाती है । गाव में हर वर्ष दीवाली के दूसरे दिन यानि लक्ष्मीपूजन तिथि पर मंदिर

में कई धार्मिक विधि के बाद संध्या समय मंगलाचरण के साथ नांदी गायन किया जाता है स्थानिक लोग तथा ,बच्चे , बूढ़े , नौजवानमहिला सभी बड़े चाव से इसमे भाग लेते है । उद्धरण के लिए मैं कुछ नांदी के प्रकार यहाँ दे रही हूँ ।

चित्र 1. गोअन टेम्पल्स द्वारा निर्मित वीडियो "नांदी दर्शन" का स्क्रीनशॉट, जो श्री संस्थान गोकर्ण पार्टगली जीवोत्तम मठ के आधिकारिक यूट्यूब चैनल पर प्रकाशित है।

 # लक्ष्मी मंदिर ट्रस्ट , सावरकट्टा कुंकली गोवा
नांदी
नमन् आहे लक्ष्मी पदा
श्री पांडुरंग श्री शारदा
चिरानन्द सचि श्री सुखकंदा
अज्ञान आम्ही ती अज्ञान आम्ही ती
अज्ञान आम्ही ती तुझी बालके
सदा तयाना द्या सुमति
नाट्यरंगी रंगवी सदा ग्रामदेवी पद नमुनी सदा
अज्ञान आम्ही ती तुझी बालके
आ आ आ आ आ आ
तव गुण गाया बल देई आम्हा
जयजयकारा वदों सदा [3]

इस नांदी में कवि देवी लक्ष्मी के चरणों की वंदना करता है । साथ ही श्री पांडुरंग देव तथा विद्या की देवी शारदा का आवाहन करता है । चिद आनंद से भरी सभी को सुख प्रदान करने वाली ग्रामदेवी श्री शांतादुर्गा के चरणों को नमन करता है । कवि कहता है हम अज्ञानी बालक है, आप सदा हमे सुमति देना, नाट्य रंग में रंग देना और आपका गुणगान करने हेतु बल या शक्ति देना
ताकि हम सदा आपका जयजयकार कर सके ।

 # श्री देव रामनाथ देवस्थान - रामनाथी
जय तू जय श्री रामनाथा । कल्पतरुची तू अनाथा ॥ १ ॥
अंकी अंबा शिरी गंगा । चंद्रमौली भस्म अंगा
स्कंदि खेलवी जो भुजंगा । नमन त्यासी रामनाथा [4]

यह नांदी भी नाट्य देवता नटराज शिव जी को पित है । शिव के अनेक नामों में से एक नाम है रामनाथ , फोंडा तालुका में रामनाथी गाव के मंदिर में इनका भव्य दिव्य मंदिर है । हर वर्ष यहाँ मेले में नाटक खेले जाते है और नांदी भी गायी जाती है ।
इस छोटी सी नांदी में कवि कहते हे देवो के देव महादेव रामनाथ तेरी जय हो
जो अनाथ है उनके लिए आप कल्पतरु समान सबकुछ प्रदान करनेवाले है । जिनके साथ में शक्ति स्वरूप अंबा है और सिर पर गंगा बहती है । अंग पूरा भस्म से लिप्त है चंद्रमा सिर पर विराजमान है , कंधों पर सर्प के साथ खेल रहे है , ऐसे देव रामनाथ को मेरा नमन है ।

श्री देवकीकृष्ण लक्ष्मीरवळनाथ संस्थान माशेल गोवा, नांदी

नमन तुका श्री देवकीकृष्णा
देवा रवळनाथा
शुभ कार्याच्या शुभ आरंभी
शुभ यश देणे मागतां---------1
नमन तुका श्री देवकीकृष्णा
देवा रवळनाथा
माय देवकी- कृष्ण सदोदित
उल्याक आमच्या पावता
संकटात तूं देव रवळनाथ
फाटल्यान उबो रावता
देव दयेचे पावन आमी
तुजीच कीर्ती गायता----------2
नमन तुका श्री देवकीकृष्णा
देवा रवळनाथा
भक्त तुजे हे आमी सगळे
सेवेक एकठांय आयल्या
दर्शन तुजिया तेज रूपाचें
घेवून धादोस जाल्या
अशीच घडची अखंड सेवा
हेंच मागणे आतां ----------3
नमन तुका श्री देवकीकृष्णा
देवा रवळनाथा शुभ कार्याच्या शुभ आरंभी
शुभ यश देणे मागतां [5]

इस नांदी की खासियत यह है की इसकी भाषा कोंकणी है । माशेल गाव मंदिरों के लिए प्रसिद्ध है, यहाँ कई देवी देवता आकर बसे है जैसे श्री देवकीकृष्णा, श्री लक्ष्मी रवलनाथ, मलीनाथ , भूमिका , शांतादुर्गा , दत्तात्रय , गणपती , मारुति , वनदेवी आदि । मंदिर के सामने पीपल का बढा पेड़ है । जहां कृष्ण लीलाएं जैसे चीखलकालों , गवलंणकालों आदि । इस नांदी में कवि कहते है हे देवा देवकीकृष्णा रवलनाथा हम तुम्हें नमन करते है और इस शुभ कार्य के आरंभ में शुभ यश की कामना करते है । जब भी हम तुम्हें कान्हा प्यार से पुकारते है, तुम दौड़ के चले आते हो । जब भी संकट जीवन में आते है आप साथ खड़े होते है । आपका दयाभाव देखकर हम आपकी कीर्ति गाते है । हम सभी भक्त तुम्हारे दिव्य दर्शन के लिए लालायित है । आपकी सेवा हमारे हाथों से सदा होती रहे , यही हमारी मांग है । यह नांदी लिखी है शिरीष लवांदेजी ने जो खुद एक कृष्ण भक्त है ।

व्यावसायिक नाटक की परंपरा :

दूसरा प्रकार जो नांदी में हमे दिखायी देता है वो है व्यावसायिक नांदी । यह नांदी जो होती है यह हर नाटक की अपनी अलग होती है ल कही कही यह नाटक की कथावस्तु को दर्शाती हैं।

अब हम कुछ नाटक पर आधारित नांदिया देखते है

नांदी : तुम्हा तो शंकर सुखकर हो नाटक : सौभद्र गायक: पं. भीमसेनजी जोशी , पं. वसंत् राव देशपांडे

भार्गवराम आचरेकर

***तुम्हा तो शंकर सुखकर हो । हिमधरस्थित विकट* कानन तप करी भियकरी सुन्दर तिजवरी भूलत निज कैलासनभी तो । शंकर शुभकर हो ॥ धु ॥**

पद्मजा मुररिपुसही अवमानुनी इंद्रा चंद्रा सकला सोडूनी पर्णनी कुंदरदनि सुकंतलावेणी जाहली शिववरानु सरिणी पार्वताग्र शिरोमणि अर्पि कन्या सदगुणी

हर्षनिर्भर कर ग्रहणी झाला महादेवास तो शंकर सुखकर हो तुम्हा ॥ 6

संगीत नाटक सौभद्र की यह नांदी हमे शंकर जी को प्रसन्न करने हेतु किया गया स्तवन , जहा पर कवि कहता है कैलाश पर्वतपर रहनेवाले ,सदैव तप साधना में लीन, सुन्दर गौरी देवी के पति सभी के लिए शुभकर हो । पार्वती से विवाह करके जो हर्षित है वे तुम्हारा कल्याण करे ।
अगली व्यावसायिक नांदी, संगीत नाटक मानपमान की है , लिखा है कृ. प्. खाडिलकरजी ने और संगीत दिया है गोविंदराव टेंबे जी ने । ये ज्यादातर गोवा के रंगमंचों पर गायी जाती है ।

नमन नटवरा विस्मयकारा
नमन नटवरा विस्मयकारा । आत्मा विरोधी
कुतूहलधरा ॥
विवाह करुनी मदन जालीला । मग मदन इमित्रडू
सेविला । धनवैरागी द्युत खेलला । गौरिचा तो
अंकित झाला । परमेशाच्या ऐशा लीला ।
कविकृष्ण गत विस्मयकारा ॥ 7

इस नांदी में कवि नाट्यदेवता नटवर नटराज को नमन करते हुए विस्मयचकित है । उनका आत्माविरोधी व्यवहार देखकर , कवि के मन् में शिवजी के प्रति कुतूहल जाग उठा है । वे उनकी अजब लीलाओ को जानने समझने की कोशिश कर रहे है । वैरागी होकर भी वे गौरी को अपनाते है , मदन को जलाकर भस्म करके खुद विवाह कर लेते है । कवि ने इस नांदी में शिवजी के प्रति अपनी भक्ति अभिव्यक्त की है|

सप्तसूर झँकारित बोले
सप्तसूर झँकारित बोले गिरिजेचि वीणा
जय परमेश्वर गौरी शंकर, जय गौरी रमणा
भक्ति रसाची निर्मल गंगा
वदे खलखला धवल- तरंगा
जय गंगाधर , गिरिजा - रंगा
जय मंगल सदना
शंकर डमरू डम बोले
शिव रंजनी गिरीबाले
चरणी तव नत झाले
सुरवर कारिती तव भजना ॥ 8

इस नांदी में कवि कहता है की देवी पार्वती की वीणा सप्तसूर से परमेश्वर का गुणगान कर रही है । भक्ति रस की निर्मल गंगा शिवजी की जटाओ से बह रही है । शिवजी डमरू बजा रहे है और भक्तगण भजन गा रहे है ।

नांदी का सामाजिक और सांस्कृतिक प्रभाव:
नांदी हो या नाटक ने हमेशा जन मानस को एक साथ लाने और सुसंवाद बढ़ाने का कार्य किया है। नांदी गायन में जैसे भारतीय शास्त्रीय संगीत का प्रचार और प्रसार बड़ा है वैसे ही इससे समाज में सहज आनंद की निर्मिती हमे दिखाई पड़ती है । दो पीढ़ियों को अकत्रित करने का काम नांदी ने किया है । भारतीय संस्कृति को कायम रखने और इसकी परंपरा को जीवित रखने का कार्य नांदी ने किया है । साथ ही लोगों मे शास्त्रीय संगीत के विविध राग, आलाप, आरोह -अवरोह का ज्ञान और रुचि बढ़ाने में मदत करती है । नांदी गायन के कारण पुरानी पीढ़ी के साथ नई पीढ़ी का संगम देखा जा सकता है ।

निष्कर्ष:

कई नांदीयो को पढ़ने और उनकी व्याख्या करने के बाद हम इस निष्कर्ष पर पहुंचते है की गोवा की भूमि अनेक कलाओ की जन्मदात्रि है ।

आकार में भले ही गोवा राज्य अन्य राज्यों के मुकाबले छोटा दिखता हो , लोकसंस्कृति और लोकपरंपरा में बहुत ही समृद्ध है । आज की पीढी भी अपनी संस्कृति का जतन करने में हमेशा आगे रही है । गोवा की लोकसंस्कृति का मूल स्रोत भारतीय संस्कृति की एकात्मता से आई है । विदेशी सत्ताओ के दमन क्रिया के प्रभाव में भी गोवावासियोने अपनी संस्कृति और परंपरा को जीवित रखा । नाटक, यह सांस्कृतिक परंपरा का प्रतीक है । पर्तगाली काणकोण सारस्वत मठ में आयोजित नांदी दर्शन कार्यक्रम इसका जीता जागता प्रमाण है । भारतीय संस्कृति में कोई भी शुभ काम करने से पहले देवताओ का आवाहन किया जाता था ,नाटक जैसे मनोरंजन के कार्यक्रम में हम भगवान को याद करते है , उनकी प्रार्थना करते है ताकि हम श्रोताओको आनंद प्रदान कर सके । हर एक जगह की नांदी को अलग अलग राग में गाया गया है । नांदी गाना आसान बिल्कुल नहीं क्योंकि इसमें तरह तरह के आलाप शामिल है । कई दिनों तक इसका अभ्यास करना पडता है । इस नाट्य संस्कृति का जतन और संवर्धन करना आज हमारा दायित्व है ।

आभार

मैँ सर्वप्रथम आदरणीय डॉ. सोमनाथ कोमरपंत जी के प्रति अपना आभार व्यक्त करती हूँ, जिन्होंने इस शोध आलेख को अंतिम रूप देने में मेरा मार्गदर्शन किया । साथ ही मैँ गुरुवर ओमप्रकाश त्रिपाठी जी एवं मेरे विभागाध्यक्ष डॉ.संदीप लोटलिकर जी के प्रति भी अपनी कृतज्ञता व्यक्त करती हूँ, जिन्होंने समय-समय पर इस शोधपत्र को पूर्ण करने में मेरा सहयोग किया ।

हितों का टकराव: लेखिका को अपनी जानकारी के अनुसार किसी प्रकार का कोई हित टकराव नहीं है।

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No Brochure, No Building, Still Sold: Trust Formation and Buyer Decision-Making in Pre-Launch Real Estate Sales

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Abstract: In India, pre-launch real estate sales occur in highly uncertain environments where buyers commit without access to physical evidence such as site visits, brochures, or sample flats. This study examines how trust is formed between salespersons and buyers under such high-risk conditions. Primary survey data were collected from 85 customers and 40 real estate sales professionals operating in the Mumbai Metropolitan Region. Exploratory Factor Analysis (EFA) identifies three dominant drivers of trust: salesperson credibility, emotional connection, and transparent communication. The findings indicate that in the absence of tangible cues, the salesperson becomes the primary trust anchor influencing buyer decision-making. The study offers practical managerial implications for developers and sales teams engaged in pre-launch property markets.

Keywords: *Pre-launch real estate, trust, salesperson credibility, consumer decision-making, communication, perceived risk.*

I. INTRODUCTION

The Indian real estate sector has increasingly adopted pre-launch and early-stage sales as a strategic approach to generate early cash flows and manage project financing risks (Li & Chau, 2018). In such transactions, buyers are required to make high-value financial commitments without access to traditional evaluation cues such as physical site visits, sample flats, or completed structures. This absence of tangible evidence significantly elevates perceived risk and uncertainty in buyer decision-making.

Trust therefore becomes a central determinant in pre-launch property purchases. Prior research indicates that in high-risk and high-involvement transactions, buyers rely heavily on interpersonal trust rather than objective product attributes (Wood et al., 2008). In the context of pre-launch real estate, the salesperson often assumes a critical role as the primary source of information, assurance, and credibility. This study seeks to examine how trust is formed and sustained between salespeople and buyers when the product exists only as a promise rather than a physical reality.

Literature Review

Existing literature in real estate marketing and consumer behavior highlights trust as a key factor influencing buyer confidence in uncertain purchase environments. Wood et al. (2008) emphasize that salesperson honesty, competence, and communication clarity strongly shape buyer trust during initial sales encounters. Similarly, Chen and Wang (2023) find that perceived transparency and salesperson credibility significantly affect real estate purchase decisions. Studies focusing on pre-launch and under-construction property sales

suggest that buyers compensate for the lack of physical evidence by relying on alternative trust cues such as developer reputation, regulatory compliance, and salesperson behavior (Li & Chau, 2018). Digital visualization tools, including virtual tours and 3D walkthroughs, have been shown to reduce perceived risk by providing visual substitutes for physical inspection (Ullah et al., 2021). However, these tools function primarily as support mechanisms rather than replacements for interpersonal trust.

Consumer psychology research further indicates that emotional reassurance and relational engagement play an important role in high-risk financial decisions. Buyers are more likely to commit when they feel understood, supported, and emotionally connected to the salesperson (Chen & Wang, 2023). Despite these insights, limited empirical research specifically examines trust formation in pre-launch real estate sales, where every aspect of the transaction remains intangible. This study addresses this gap by empirically identifying the key trust drivers influencing buyer decisions in pre-launch property markets.

II. METHODOLOGY

This study adopts a quantitative research design using primary data collected through structured online questionnaires administered to 40 real estate salespersons and 85 customers within the Mumbai Metropolitan Region. Convenience sampling was used due to accessibility constraints and the exploratory nature of the study, which aims to identify dominant trust factors rather than generalize across the entire population. Data suitability for factor analysis was confirmed using the Kaiser-Meyer-Olkin (KMO) measure (0.783) and Bartlett's Test of Sphericity ($p < 0.001$). Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis with Varimax rotation to identify underlying trust dimensions influencing buyer decision-making.

Customer Findings (EFA Results)

From the customer's viewpoint, EFA identified communication and transparency as the strongest trust determinants. Specifically, customers appreciated an explanation of the project details, frank discussions about risks and benefits, transparent documentation, and regular updates during the process of decision-making. These facets cumulate to indicate transparency as a basic pre-requisite for pre-launch transactions. There were also emotional factors that influenced comfort on the part of customers: buyers felt understood when responding positively to the sense of rapport and follow-through that was shown in empathetic, patient behaviour on the part of the salesperson. Emotional contact becomes particularly critical in situations where buyers are investing in a promise rather than a visible or tangible property. A third critical emergent trust factor involved the personal reputation of the salesperson. Buyers often drew upon the salesperson's credibility, confidence, and ability to simplify complex information. In many cases, customers claimed to trust the salesperson more than the developer or the brand-a fact that underlines the disproportionate power individual salespersons enjoy in pre-launch decisions

involving real estate. At a time when the product is on paper only, it is interpersonal trust that becomes the primary anchor for any decision, with the salesperson serving as the face of the project. What the findings underline, however, is that while digital tools support the process, along with the documentation, it is human interaction that forms the basis of buyer confidence and commitment-where buyers need to rely so much more on the person presenting the information rather than the property itself.

III. DISCUSSION

The combined findings from salespersons and customers indicate that trust is the primary driver of buyer commitment in pre-launch real estate transactions. In the absence of physical evidence, buyers rely on the salesperson's credibility, clarity of communication, and ability to establish emotional reassurance. While digital tools such as virtual tours and documentation assist in reducing uncertainty, they function as supporting mechanisms rather than decision drivers. The results reinforce that interpersonal trust, supported by transparent information and professional conduct, remains central to successful pre-launch sales.

The findings suggest that in pre-launch real estate contexts, trust is not an outcome of the sales process but the condition that makes the transaction possible in the first place. When physical evidence is absent, buyers recalibrate their decision criteria, prioritizing relational and ethical cues over traditional product evaluation. The salesperson's credibility and communication clarity therefore assume a symbolic role, representing the reliability of the project itself. Transparent information sharing does more than reduce uncertainty; it signals intent and integrity, shaping buyer perceptions of future delivery and post-purchase security. Although digital tools contribute to cognitive understanding, their influence remains contingent on interpersonal validation, indicating that technology alone cannot compensate for trust deficits. This reframes pre-launch sales as a fundamentally relational exchange, where interpersonal trust mediates risk acceptance and drives buyer commitment.

IV. CONCLUSION

This study set out to examine how trust is formed in pre-launch real estate sales where buyers commit without tangible evidence. The findings confirm that transparent communication, emotional engagement, and salesperson credibility are the primary drivers of buyer trust in such transactions. In the absence of physical proof, buyers rely heavily on the salesperson's assurance, honesty, and interpersonal competence.

From a managerial perspective, the results highlight the need for developers to invest in salesperson training focused on trust-building, ethical communication, and emotional intelligence. While digital tools support visualization, they cannot replace the role of human interaction in reducing uncertainty. Future research may extend this study by using longitudinal designs, larger samples, or cross-city comparisons to further explore trust formation across different real estate markets.

Implications and Future Research

The study provides practical insights for real estate developers and sales managers by emphasizing the strategic importance of salesperson credibility and transparency in pre- launch sales. However, the research is limited by its regional focus and convenience sampling method. Future studies may explore buyer trust dynamics across different cities, project scales, or regulatory environments and examine trust evolution over time.

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Artificial Intelligence (AI) in Mushroom Cultivation Practices: A Review

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Abstract: Artificial Intelligence (AI) is revolutionizing mushroom cultivation through precision monitoring, automated decision-making, disease detection, yield prediction, and robotic harvesting. Between 2020 and 2025, emerging research shows rapid integration of machine learning (ML), deep learning (DL), IoT-enabled sensing, and computer vision into mushroom farming systems. These tools enhance productivity, sustainability, and quality control, although challenges related to data quality, hardware integration, and costs still exist. This review consolidates recent advancements, highlights key applications, and explores future research opportunities. AI is increasingly used in mushroom cultivation, providing precision monitoring, predictive analytics, and automation. We highlight case studies, technical approaches, challenges, and future research directions toward sustainable mushroom production.

Keywords: Artificial Intelligence (AI), Mushrooms, cultivation, practices, Applications, Challenges.

I. INTRODUCTION

The mushroom industry has emerged as a significant branch of agricultural biotechnology over the past few decades. This industry is driven by the ecological as well as nutritional, and pharmacological value of fungi (Kour et al., 2019; Chugh et al., 2022). Edible mushrooms are rich in proteins, essential amino acids, numerous bioactive compounds with immunomodulatory dietary fiber, and antioxidant activities (Thomas et al., 2024; El-Ramady, 2022; Pérez-Moreno et al., 2021). Mushrooms contain compounds that are considered one of the most important functional food groups, offering diverse ecological and medicinal benefits (Łysakowska et al., 2023). The global edible mushroom market has reached a valuation of approximately USD 50 billion. In 2021, the global mushroom market was valued at around USD 50 billion. By 2030, it is expected to grow beyond USD 80 billion, due to the rising awareness about the health benefits of mushrooms, a shift toward vegan diets, and the increasing demand for sustainable food options (Anand et al., 2025). Mushrooms play a key ecological role converting agricultural waste—like sawdust, corn husk, and wheat straw into nutrient-rich food products, indirectly promoting a circular bioeconomy (Pathak et al., 2022). Mushroom cultivation is one of the fastest-growing horticultural industries worldwide, valued for its nutritional and medicinal properties. Species such as *Agaricus bisporus*, *Pleurotus ostreatus*, and *Lentinula edodes* are cultivated extensively, contributing to food security and functional foods. However, mushroom farming is highly sensitive to environmental conditions, requiring precise control of temperature, humidity, CO_2, and substrate composition. Traditional methods rely heavily on grower expertise, which introduces variability and inefficiency (Jacob et al., 2023). AI technologies—machine learning (ML), computer vision, and reinforcement learning—offer data-driven solutions to optimize cultivation practices. Applications include substrate optimization, contamination detection,

climate control, disease management, yield prediction, and robotic harvesting. These innovations align with broader goals of sustainable agriculture and smart farming (Abdal et al., 2024; Dhaked et al., 2025; Lemphane et al., 2025). Mushroom cultivation is strongly dependent on environmental variables such as temperature, humidity, carbon dioxide concentration, and substrate composition. Traditionally, these variables require continuous manual monitoring. AI technologies, including ML, DL, fuzzy logic, IoT, and robotics—offer solutions for real-time data analysis and automated process control, attracting increasing research attention in recent years (Guragain et al., 2024; Charisis et al., 2023).

Traditional mushroom breeding is often slow because of its dependence on visible traits, which do not always give enough information for selecting the best strains. Today, artificial intelligence (AI) combined with next-generation sequencing (NGS) and modern phenotyping tools is making this process much faster. Mushroom growers also face problems in maintaining standard growing conditions because of changing environments and different cultivation methods (Jacob et al., 2023; Perera et al., 2024). AI tools such as reinforcement learning (RL) and Internet of Things (IoT) systems help solve these challenges by monitoring temperature, humidity, and other conditions in real time. These systems automatically adjust the climate and create continuous feedback loops to keep growing environments stable (de La Croix et al., 2022, Moorthi et al., 2023). AI models, especially convolutional neural networks (CNNs), are also useful for detecting contamination in mycelium and checking how well the substrate has been colonized, helping farmers act quickly and avoid spoilage (Rowland et al.,2025).

Species identification is another area where AI is bringing major changes. Traditional methods using microscopy or culture techniques are time-consuming and sometimes inaccurate (Feng et al., 2023). When combined with DNA barcoding and natural language processing (NLP) to search large taxonomic databases, AI can greatly improve classification, especially in regions rich in biodiversity but low in research support (Gill et al., 2023). These advancements also help document wild edible mushrooms more accurately, supporting both conservation and commercial use. Although many studies have explored AI in different parts of mushroom research (Sarkar et al., 2023; Wang et al., 2022; Wei et al., 2022), there is still no detailed review focusing on breeding, cultivation, and species identification together. Such a review is important to guide future work and make the best use of AI in this field. Therefore, our study aims to provide a clear and comprehensive overview of how AI is being used across the entire edible mushroom industry.

II. Technological Trends in AI-Driven Mushroom Cultivation

Low-cost IoT ecosystems provide continuous datasets for AI modelling. Sensor networks track humidity, CO_2, temperature, and substrate moisture, enabling predictive analytics and automated micro-climate control (Guragain et al., 2024; Shams et al., 2024). ML algorithms, including random forest, SVM, and gradient boosting, have been used to predict yield based on environmental and substrate variables (Charisis et al., 2023). These models assist in optimizing production schedules and reducing uncertainty. CNN-based systems detect diseases, contamination, and maturity levels of mushrooms. Studies report >90% accuracy for disease classification and species identification using transfer learning techniques (Zahan et al., 2022; Ahmad et al., 2024). Robotic harvesting systems integrate vision algorithms and soft end-effectors to pick mushrooms with minimal damage. Recent prototypes show promising results for commercial button mushroom farms (Mavridis et al., 2023; Recchia et al., 2023). Genetic algorithms, particle swarm optimization, and Bayesian optimization are being used to improve substrate composition, ventilation cycles, and environmental control strategies (Singh et al., 2025).

III. Applications of AI in Mushroom Cultivation

AI-controlled systems adjust ventilation, humidification, and CO_2 scrubbing to maintain species-specific growing conditions. Fuzzy logic and ML-based controllers have been validated in oyster mushroom farms (Subari et al., 2025). Prediction models contribute to labor planning, supply chain logistics, and cost management. Multi-site datasets improve model robustness (Charisis et al., 2023). Computer-vision systems detect mold, blotch, and bacterial infections at early stages, reducing crop losses and enabling targeted interventions (Zahan et al., 2022). Deep learning approaches accurately classify mushroom species and maturity stages, assisting growers in sorting, grading, and harvest timing (Ahmad et al., 2024). Robotic arms integrated with CNN-based detection systems perform selective harvesting and gentle handling, reducing labor dependence (Mavridis et al., 2023). ML models assist in the sustainable reuse of spent mushroom substrate and in waste-minimization strategies (Othman et al., 2020). AI tools can be useful in Substrate and Spawn Optimization, such as Image recognition models that detect contamination in spawn bags, reducing losses from hidden infections. Predictive algorithms estimate colonization rates based on substrate composition and inoculation density. AI-driven sterilization monitoring ensures uniform substrate preparation, improving consistency across batches. Reinforcement learning agents dynamically adjust humidity, temperature, and CO_2 levels to optimize pinning and fruiting. Predictive models forecast flush timing, enabling better labor allocation and market planning. Smart sensors integrated with AI dashboards provide real-time alerts for deviations in microclimate (Jacob et al., 2025). Computer vision (CNNs) detects early symptoms of *Trichoderma* contamination, bacterial blotch, and mite infestations. AI-based risk scoring integrates hygiene logs, airflow data, and historical contamination records to prioritize interventions. Hyperspectral imaging combined with ML enhances detection accuracy for subtle infections invisible to the naked eye (Soni et al., 2022). Vision-guided robotic arms identify mature mushrooms and harvest them with minimal damage. AI grading systems classify mushrooms by size, color, and cap integrity, ensuring standardized quality for retail. Predictive shelf-life models guide packaging and distribution strategies (Ahmed & Khan, 2024). Artificial intelligence (AI) is becoming an essential tool in modern mushroom farming. It helps farmers shift from manual methods to automated, large-scale production. By combining AI with environmental sensors, camera-based monitoring, and prediction models, mushroom growers can improve efficiency, maintain steady yields, lower production costs, and reduce the chances of diseases. Application of AI technology in mushroom cultivation are summarized in Figure 1.

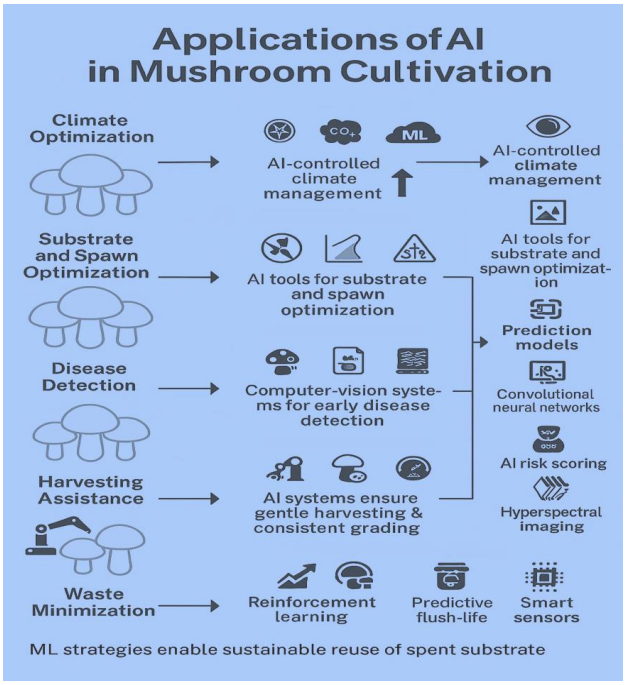

Figure 1: Application of AI technology in mushroom cultivation

Mushrooms grow well only when specific environmental conditions are maintained. These factors directly affect the growth of mycelium, the formation of fruiting bodies, and overall yield. Traditional systems depend on manual checking or simple machines, which often cannot respond quickly to changes in the

environment. AI-based systems connected with IoT (Internet of Things) sensors offer a smarter solution. In such systems, the growth chamber or greenhouse contains many sensors that continuously measure conditions like substrate temperature, humidity, CO_2 concentration, and light levels. All this real-time data is sent to a central computer, where AI analyses it and automatically adjusts the environment. This helps maintain ideal conditions for mushroom growth throughout the cultivation cycle. Automatic climate management reduces repetitive tasks and helps consolidate the expertise of various specialists. In this article, we present an AI-based system designed to control the climate in white button mushroom growing halls (Barauskas et al., 2022). These indicators are converted into time series that reflect the progression of mushroom growth. By synchronizing visual indicators with climate data and expert interventions, the system enables the use of supervised decision-making models to automatically determine necessary climate adjustments. Since both climate parameters and visual indicators vary across production stages, three separate models were developed for incubation, shock, and fruiting, employing decision trees and K-nearest neighbors methods. Results show that the trends of selected visual indicators are consistent across different cultivation cycles. Consequently, the developed decision-making models can accurately identify most situations where climate adjustments or transitions between growth stages are required.

IV. CHALLENGES

AI systems require large and diverse datasets; domain shift and inconsistent labeling reduce accuracy (Ahmad et al., 2024). Sensors, cameras, and robotic arms must withstand humid and variable conditions in mushroom houses (Mavridis et al., 2023). Small-scale growers may lack the financial and technical capacity to adopt AI-based systems (Singh et al., 2025). Variability in biological responses makes fully data-driven models difficult to interpret.

V. FUTURE DIRECTIONS

. Modern AI systems in agriculture are becoming more advanced by integrating various types of data, such as images from cameras, climate information, and even genetic data of crops or mushrooms. When these data sources combine, farmers gain a complete picture of the farm's health, helping them make better and quicker decisions. AI is also moving closer to the fields through Edge AI, where small, powerful devices installed directly on the farm can detect problems like diseases, pests, or environmental changes instantly, without waiting for cloud processing. This reduces delays and enables farmers to act swiftly. Another key development is transfer learning, which allows AI models trained on one farm or species to be easily adapted for use on another. This reduces the time and cost needed to develop new models and makes AI accessible to farmers with different crops or conditions. Sustainability remains a major focus. AI helps farmers use resources wisely by guiding water use, energy consumption, and nutrient application. This not only minimizes waste but also protects the environment.

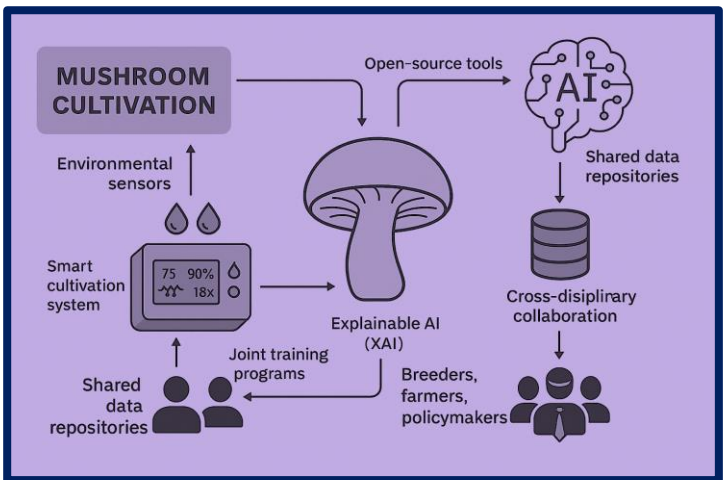

Figure 2: Schematic representation of future direction of AI in mushroom cultivation

Table 1: Application of AI technology in mushroom cultivation (Jacob et al, 2023; Singh et al., 2025)

Sr.No	Cultivation Parameter	AI Model / Technology	Full Form	Application
1	Spawn quality assessment	SVM, RF	Support Vector Machine; Random Forest	Classifies high-quality vs low-quality spawn
2	Substrate optimization	ANN, DT	Artificial Neural Network; Decision Tree	Predicts yield from substrate
3	Growth monitoring	CV, CNN	Computer Vision; Convolutional Neural Network	Monitors mycelial colonization
4	Fruiting body detection	YOLOv5, CNN	You Only Look Once v5; Convolutional Neural Network	Detects fruiting body formation
5	Harvest time prediction	LSTM	Long Short-Term Memory	Predicts optimal harvest day
6	Pest & disease detection	CNN, ResNet50, TL	Convolutional Neural Network; Residual Network (50-layer); Transfer Learning	Detects pests & diseases
7	Climate control optimization	IoT, TinyML, RL	Internet of Things; Tiny Machine Learning; Reinforcement Learning	Controls humidity, CO_2, temperature
8	Yield forecasting	Gradient Boost, AdaBoost	Gradient Boosting; Adaptive Boosting	Predicts yield
9	Energy efficiency management	TinyML	Tiny Machine Learning	Optimizes lighting & ventilation
10	Contamination detection	Autoencoders, PCA	Autoencoders; Principal Component Analysis	Detects contamination
11	Lighting condition adjustment	Fuzzy Logic + CNN	Fuzzy Logic; Convolutional Neural Network	Adjusts lighting
12	Multi-stage process modeling	RF + XGBoost	Random Forest; Extreme Gradient Boosting	Models cultivation variables

AI also collaborates with robotics. Modern collaborative robots can assist with tasks like harvesting, sorting, and grading produce. These robots work safely alongside farmers, improving efficiency and reducing manual labor. Biologists provide essential knowledge about fungi to help design experiments and verify AI results, while computer engineers focus on developing algorithms, processing data, and enhancing model performance. This teamwork ensures AI tools are both scientifically accurate and practically useful. Such collaborations have already achieved significant milestones. For example, researchers have developed genotype–phenotype prediction tools by combining deep learning with omics data. Experts have also created smart cultivation systems that use environmental sensors and AI to mimic expert decision-making for mushroom growth. Moving forward, the field will benefit from shared data repositories, joint training programs and open-source tools, that foster cross-disciplinary collaboration. With the adoption of explainable AI (XAI), future models will become

more transparent, reliable, and easier for breeders, farmers, and policymakers to trust. **Figure 2** gives a schematic representation of future direction of AI in mushroom cultivation.

VI. CONCLUSION

AI is reshaping mushroom cultivation by enabling precision, efficiency, and sustainability. AI applications enhance productivity and reduce risks. AI helps in the cultivation process starting from spawn preparation to postharvest grading. To support global mushroom production, future research should focus on scalable, interpretable, and multimodal AI systems. AI technologies improve productivity, reduces labor requirements, and also enhances disease management. Future research must focus on data standardization, cost-effective hardware, and scalable automation. AI applications in edible mushroom cultivation, breeding, and classification are driving a transformative shift in fungal research. Technologies such as machine learning, deep learning, and computer vision are improving yield prediction, controls diseases, environmental regulation, genetic analysis, helps in species identification, and guides post-harvest processing. In cultivation, AI-powered systems support precise environmental management and real-time monitoring of mushroom growth. Despite these advancements, challenges persist throughout the mushroom value chain and to overcome these obstacles we will require multidisciplinary collaboration. Future progress is expected to arise from advancements in multimodal data fusion, lightweight AI systems and stronger partnerships among environmental scientists, AI specialists, and especially Biologists. The edible mushroom industry can move towards greater sustainability, safety, and productivity by integrating smart agriculture technologies with cross-disciplinary research.

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Understanding Queer Theory and Analysing Shyam Selvadurai's Funny Boy

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Abstract: My paper aims to study the key theories in the field of queer literature as a whole at the backdrop of Shyam Selvadurai's novel Funny Boy. Queer theory in literary criticism revolutionizes our understanding of literature by challenging traditional norms. It dismantles heteronormative structures, redefines gender binaries, and uncovers hidden narratives, revealing the profound impact of diverse sexual orientations and gender identities on storytelling and our interpretation of literary texts. My paper also focuses on how Queer theory explores issues of sexuality and identity. Queer theorists analyse sexuality and identity outside of stereotypes and traditional perceptions. As it emerged as an academic discipline, queer theory became a whole new way to consider human sexuality and identity without restrictions or boundaries. Besides studying the significance and relevance of reading new literatures through the prism of queer discourse, this paper will discuss the novel Funny Boy by Shyam Selvadurai analysing the character's need for recognition and acceptance.

Keywords: Queer, literature, sexuality, gender, identity, narrative, traditional norms.

I. INTRODUCTION

Queer literature are narratives that follow LGBTQ+ themes, symbolism, or characters. These texts feature ideas that go beyond contemporary views on sexuality or gender. This is a broad category of literature, as no one piece of queer fiction reflects the same lived experience. It is important to remember that not all queer literature is written by LGBTQ+ people, and not all LGBTQ+ people write queer literature.

Queer theory in literary criticism revolutionizes our understanding of literature by challenging traditional norms. It dismantles heteronormative structures, redefines gender binaries, and uncovers hidden narratives, revealing the profound impact of diverse sexual orientations and gender identities on storytelling and our interpretation of literary texts.

Queer theory in literature involves the application of queer theoretical principles to literary texts to understand and explore the lived experience of LGBTQ+ people.

Queer theory as an academic study is considered to have begun in the 1990s. This was a time when issues of queer identity were becoming increasingly discussed in the mainstream. Queer theory had previously been dubbed gay and lesbian studies, but over time the term 'queer' was thought to be more all-encompassing as it

included all LGBTQ+ identities. For many queer theorists, it was also a reclamation of what had been and continued to be a slur.

In other words Queer theory explores issues of sexuality and identity. It discusses how these identities are formed and how much of the binaries humans adhere to are actually socially constructed. Queer theorists analyse sexuality and identity outside of stereotypes and traditional perceptions. As it emerged as an academic discipline, queer theory became a whole new way to consider human sexuality and identity without restrictions or boundaries.

- **Judith Butler: Queer theory**

Judith Butler is a seminal and foundational figure in queer theory. She is also a key figure in the realm of women's studies. Her 1990 text *Gender Trouble* is thought to have been essential in queer theory developing as an academic discipline.

In *Gender Trouble*, Butler argues that traditional conceptions of gender are a social construct. She dubs gender as a performance. People perform a specific set of actions that are traditionally associated with the sex they are born as and through the actions they are dubbed as particular gender.

Butler believes there is no one way to be a man or a woman. There are no universal definitions of the two sexes. Butler also particularly focuses on the issues of women in *Gender Trouble*. She disagrees with the idea that women can be treated as a monolithic group with all similar characteristics. They are all varied individuals with their own specific gender identities.

Butler's analysis of gender as flexible and undefinable has been key in the development of queer theories on gender and identity. Queer theory expands on traditional conceptions of gender. It explores gender as a fluid and ever-changing concept, not confining it to one singular thing. It challenges the idea that gender can ever be binary.

- ***Epistemology of the Closet* (1990) by Eve Kosofsky Sedgwick**

Sedgwick's book is considered to be one of the first modern queer theory texts. She challenges the idea of binaries in human sexuality. Sedgwick argues that sexuality is inherently more complex than can be easily defined. She also explores the idea of the 'closet' for LGBTQ+ individuals. Being in the closet means that one is currently keeping their sexual or gender identity private. Sedgwick writes that it is both dangerous to live in and outside the closet. For many people, it can be an immense stress and danger to be in the closet, but it can be even more dangerous to come out of the closet.

Sedgwick engaged in complex explorations of different types of human sexuality. She argued against easy categorisations of sexuality. Sedgwick makes the point that gay men and gay women may identify with each other on the basis of being part of the LGBTQ+ community, whereas straight men and women identify with each other as they are both heterosexual.

However, Sedgwick complicates this by stating that groups also associate with each other based on the sex they are attracted to. For example, lesbians and straight men may have things in common, as may gay men and straight women. On top of this, Sedgwick maintains that these groups can still be extremely opposed. Her complex analysis and descriptions emphasise the many nuances of human sexuality and how difficult it is to define them in binary terms.

- **'Compulsory Heterosexuality and Lesbian Existence' (1980) by Adrienne Rich**

Adrienne Rich's essay was influential in thinking about non-heterosexual, and specifically lesbian, identities. Rich analyses heterosexuality as inherent to patriarchy and argues that it is used by men as a tool to oppress women. She encourages women to explore their sexuality as something more fluid and be open to the possibilities of lesbianism.

Rich's essay holds up lesbianism as a tool to fight patriarchy and free women from the bonds of oppression. She believes that heterosexuality gives men an additional way to **control** women. Lesbians do not rely on men in the same way. Rich presents lesbianism as an ultimate kind of feminism.

This essay is also foundational because of Rich's use of the term '**compulsory heterosexuality**'. She is thought to have created and popularised the term. Compulsory heterosexuality refers to the idea that heterosexuality is the only natural and normal sexuality. For many years, society has forced heterosexuality on people, regardless of how they truly feel. This is done by presenting heterosexuality as the norm in various societal institutions, like education, media, and family. We will study how this idea of 'compulsory heterosexuality' affects the main character Arjie in the chosen novel for study i.e. *Funny Boy.*

Rich argues strongly against the pressure compulsory heterosexuality places on women. She believes that no woman is truly heterosexual, all experience at least some same-sex attraction.

- **Three Essays on the Theory of Sexuality (1905) by Sigmund Freud**

Freud is a key figure in psychoanalytical and psychological history. His views on human

sexuality were very unusual for his time. Homosexuality was still illegal and taboo in the early 1900s. Freud argued that every human was at least somewhat bisexual. He also theorised homosexuality resulted from a fixation at an earlier stage of psychosexual development, rather than a choice or inherent trait. Many later queer theorists based their ideas on Freud's, either agreeing with or challenging them.

Freud began many important conversations on sexuality which remain complex and distinct from modern perspectives.

- ***The History of Sexuality* (1976) by Michel Foucault**

Foucault's book was influential in modern queer theory. While he does not by any means discuss exclusively queer issues, Foucault engages in a wide-ranging analysis of human sexuality. Sexuality was considered an inappropriate topic for discussion, particularly homosexuality. This has gradually changed as time progressed.

Foucault writes of the impact power has on sexuality. Despite the recent moves made by the LGBTQ+ community in the 1960s and 1970s, powerful institutions still had much control over them via government and media. It is important to note that Foucault was writing this text in the context of the rapidly developing gay rights movement.

The power politics that Foucault speaks of is discussed through the novel *Funny Boy* to understand the dilemma of Arjie in a better way.

- **Butler, Sedgwick, Rich, and 1990s queer theory**

Building on the work of Freud and Foucault, queer theory as a discipline expanded significantly in the 1990s. Theorists like Butler, Sedgwick, and Rich deconstructed and challenged traditional notions of gender identity and sexuality. Stories of queer experiences became much more frequently told and normalised. Much of the work of 1990s queer theory has gone on to influence how we think about sexuality and identity today. Modern queer theorists explore the fluidity of human sexuality and identity.

- **Analysing Shyam Selvadurai's *Funny Boy:***

Shyam Selvadurai's novel *Funny Boy* (1994) recounts the gay childhood and adolescence of Arjie Chelvaratnam amidst the Tamil/Sinhala interethnic conflict in Srilanka. This novel from 'new' literatures too interlinks the queer theme with the ethnic strife. Space plays an important role in the unfolding of queer discourse in the novel. While the boys play cricket in the front garden, the girls are relegated to the territory

near the kitchen. While Arjie is supposed to inhabit the first one, i.e. the male space, he transgresses the 'norm' and aligns himself with the second one, i.e. female space. Rather than playing the masculine game of cricket, he is comfortable with the feminine game of bride-bride. His dressing up in the clothes of the bride is symbolic of his journey towards flexible gender identity:

> ***I was able to leave the constraints of myself and ascend into another, more brilliant, more beautiful self, a self to whom this day was dedicated, and around whom the world, represented by my cousins putting flowers in my hair, draping the palu, seemed to revolve. It was a self magnified, like the goddesses of the Sinhalese and Tamil cinema, larger than life; and like them … I was an icon, a graceful, benevolent, perfect being upon whom the adoring eyes of the world rested. (Selvadurai pg.5)***

The idea of 'performativity' by Judith Butler which is discussed earlier can be applied here. This moment marks Arjie's initial realisation of his true identity through the "transfiguration" of dressing in a saree, before he is forced to face societal gender expectations. It is this 'performativity' which Butler speaks of. Boys are expected by society to perform boys duty (masculine) and girls to do feminine things. Here even though Arjie has liking for girls dressing and ways of behaviour he must choose the male ways as society expects boys to be. The same gender crises as Selvadurai describes Arjie as "caught between the worlds of the boys and the girls, not belonging or wanted either" (p.39) establishing his isolation from standard gender roles. After being banished from the "girls territory" (the back garden) for playing bride-bride and being rejected by the "boys' territory" (the front garden) for not liking cricket, Arjie is left in a "third space" where he is wanted by neither group.

Gayatri Gopinath in her book, *Impossible Desires* (2005) suggested that "Arjie's performance of queer femininity radically reconfigures hegemonic nationalist and diasporic logic, which depends on the figure of the woman as a stable signifier of tradition" (174). In an interesting note, Arjie comments that "In the hierarchy of bride-bride, the person with the least importance, less even than the priest and the page boys, was the groom. It was a role we considered stiff and boring, that held no attraction for any of us" (Selvadurai 6). The marginalization of the groom figure unsettles the concept of heterosexual marriage. The groom being the representative of traditional patriarchy also gets less attention which is quite metaphoric of challenging patriarchy in queer

discourses. In her analysis of the game, Gopinath suggests that "the apparent non-performativity of masculinity in the game references both the unimportance of the groom and the hyperbolic femininity embodied by the figure of the bride, as well as the potentiality of a female same-sex eroticism that dispenses with the groom altogether". There is a constant patriarchal policing of Arjie to rid of effeminacy. He is forced to play cricket; he is provided male company like Jegan and finally is enrolled in the Queen Victoria Academy, an all-male public school. It is his father that sends him to Victorian Academy specifically to "force [him],to become a man,'' (pg. 210) viewing his funny behaviour as something to be cured. Adrienes Rich's use of the term '**compulsory heterosexuality**' can be also applied here to understand Arjie's state that it is the society that has forced heterosexuality on people, regardless of how they truly feel.

In his scholarly analysis of Shyam Selvadurai's *Funny Boy* Sandeep Bakshi argues that both the trope of cricket and the public school are vestiges of a colonial past that enforce rigid, Western derived norms of masculinity and discipline in post-independent Sri Lanka. Bakshi points that cricket is used as a tool of "athletic prowess" to normalize hegemonic masculinity. For the protagonist Arjie, being forced to play cricket is a performance of gender that attempts to "cure" his perceived effeminacy and align him with the "manly" standards of colonial elite. Interestingly, both the heteronormative institutions of patriarchy and colonialism are equally hegemonic in nature because effeminacy and empire always stand in violent opposition. But this homosocial space of the male school becomes a subversive space when Arjie builds a homosexual relationship with his classmate Shehan within the premises of the school. According to Bakshi, "The colonial/patriarchal enterprise of "becoming a man" is queered to reclaim the homosocial realm and re-signify it as a homosexual space"(79). While in Wole Soiynka's novel, *The Interpreters*, there was a simultaneous otherisation of queer and racial identity and it was unaccomodative of any 'other' in its vicinity, Selvadurai's novel is more accommodative.

Foucault concept of "Power" can be applied here to understand the "Unfair Code" at the academy where Arjie observes a rigid code of masculinity (eg. no blinking, no long hair). He realises that "Right and wrong, fair and unfair had nothing to do with how things really were…everything had to do with who held power." (pg. 260) This moment marks Arjie's transition from a naïve childhood understanding of morality to a complex adult awareness that

power, rather than justice, often dictates what is considered "right" or "wrong" in society.

Arjie's (belonging to Tamil ethnicity) queer romance with Shehan (belonging to majoritarian Sinhala ethnicity) and his disloyalty to Tamil ethnicity by intentionally making a mess of the poem while reciting (assigned to him by Black Tie, the Principal, who expresses solidarity with Tamil identity) in a school programme challenges ethnic polarization of the nation. The novelist also facilitates a bond between queer subjects and the marginal others like Radha Aunty, his mother, Daryl Uncle and Jegan who are subordinated in terms of gender, race and class.

Towards the end of the novel, Arjie's emigration to Canada invites an ambivalent interpretation. A novel which continuously engaged with queering the homosocial spaces and normative identities, fails to give shelter to Arjie. Why this fascination of getting instated in a White land? Is the White country more emancipating than the homeland of the postcolonial nation state? This signifies another kind of marginality as a South-Asian migrant in a white land with his sexual marginality. But at the same time Arjie's remarks about the family signals a different kind of interpretation: "I was no longer a part of the family in the same way. I now inhabited a world they didn't understand and into which they couldn't follow me" (pg. 285). He is now imagining a cosmopolitan space driven by "queer time"; a space free from the (hetero) normative structure of the family.

CONCLUSION:

The novel signifies that sexuality and gender play an important role in defining relationships between characters and their perceptions of one another. The novel also showcases "double marginalisation" faced by Archie where his sexual identity is repressed within his own family, while his ethnic identity (Tamil) is oppressed by the state. Arjie's sexual awakening occurs simultaneously with 1983 anti-Tamil riots, suggesting that both queer and ethnic identities are subject to violent "policing of boundaries." He recognizes the parallel between his forbidden love for Shehan and his Radha Aunt's forbidden love for a Sinhalese man, both being crushed by societal expectations. The novel thus showcases societal pressures and taboos that homosexual character's face and their need for recognition and acceptance. At broader scale the novel suggests that Homosexuality is perceived as "foreign" or an aberration by both major ethnic groups (Tamil and Sinhalese) leaving queer individuals with no safe national identity. The one basic thread that connects and appropriates the study of queer discourses in "new"

literatures is their negotiation with identity at a transitional/ crisis-laden/ transgressive moment. To quote from Kobena Mercer: "…identity only becomes an issue when it is in crisis, when something assumed to be fixed, coherent, and stable is displaced by the experience of doubt and uncertainty. From this angle, the eagerness to talk about identity is symptomatic of the post-modern predicament of contemporary politics" (259). As opposed to the idea of linear hegemonic heteronormativity, queer constructs labyrinthine discourse of body that has polyvalence reflecting confusing nature of identity and history.

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CONFLICTS OF INTEREST:

The author to best of her knowledge has no conflicts of interest.

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Human Development and Family Studies: A Course that Develops Life Skills in Adolescents

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Abstract: Human Development and Family Studies (HDFS) is a specialized area within Home Science Programmes that focuses on understanding human life from conception to death. The curriculum provides individuals with a robust theoretical foundation and essential skills to support optimal development and promote happy, healthy families, ultimately contributing to creation of a positive and holistic society. The course also promotes the integration of diverse innovative pedagogical approaches to facilitate deep, lifelong learning of concepts and skills, moving beyond rote memorization and exam-oriented objectives. To assess the influence of the Course on development of life-skills, researchers from a Home Science Degree College in Goa conducted Focus Group Discussions with alumni, final-year students, and students who had recently chosen this specialization. These discussions explored participants' perspectives on their learning experiences and the life-skills they attributed to their specialization. Key themes emerging from the analysis highlighted positive perceptions of the Course. Alumni specifically reported that the knowledge and life-skills gained had significantly contributed to their personal and professional development, enabling them to excel in various capacities at the workplace and also effectively assume supportive roles within their families and social networks. Students highlighted specific practical exposure and skills they had picked up which would help secure a job and possible entrepreneurship opportunities. Additionally, they reported gaining awareness of personal qualities and latent skills, suggesting an improvement in self-awareness. Participants underscored the breadth and depth of lifelong learning, advocating for the inclusion of specific HDFS papers in the curricula of other UG programmes as well. This research has implications for education and policy as it highlights the importance and applicability of the HDFS specialization to development of life-skills and advocates its inclusion in varied formats tailored to a variety of educational levels and settings.

Keywords: Life Skills, Life–Span Development, Human Development, Family Studies, Home Science

I. INTRODUCTION

Life skills, often defined as essential competencies required for individuals to navigate personal, professional, and social environments effectively (Murray, Clermont, & Binkley, 2005), were historically categorized under the terms "employability skills" or "soft skills" due to their broad applicability across various contexts. However, contemporary discourse has expanded the definition of life skills to include competencies such as social skills, teamwork, leadership, goal-setting, problem-solving, and decision-making, among others (Steptoe & Wardle, 2017). These skills are

recognized as fundamental not only in personal and peer-group settings, as well as broader social engagements.

Puspakumarag (2013) highlighted the effectiveness of life skills training in preventing various issues, including substance abuse, teenage pregnancies, violence, and bullying, while also fostering self-confidence and self-esteem among adolescents. Vranda and Rao (2011) similarly stated that life skills education enhanced psychosocial competencies. Recognizing the critical role of life skills in workforce development, many countries have integrated them into educational curricula to better prepare students for professional challenges (Jackson, 2010). Britton et al. (2017) further emphasized that equipping students with workplace-relevant life skills is a key objective of higher education. Nair and Fahimirad (2019) conducted a qualitative study emphasizing the significance of life skills in enhancing undergraduate students' personal and social competencies. Their study underscored the necessity of integrating life skills education into higher education curricula to foster critical thinking, problem-solving, and interpersonal communication.

Despite this recognition, research indicates that a significant proportion of employer's report deficiencies in these essential competencies among graduates (British Chamber of Commerce, 2014). This gap underscores the necessity of embedding life skills training within undergraduate education to enhance students' adaptability and effectiveness in future workplaces.

Possibly in response to the felt need to include Life Skills training in the curriculum, the University Grants Commission (UGC) in India recently introduced a Life Skills 2.0 curriculum aligned with the National Education Policy (NEP) 2020 (UGC Draft Curriculum for Life Skills – Jeevan Kaushal, 2022). This curriculum includes modules on development. This multidisciplinary approach highlights the uniqueness and variability of human life, offering students deep insights into the factors shaping individual and family experiences familial interactions but also in professional and communication, professional skills, leadership, digital literacy, and emotional intelligence. It aims to equip students with essential life skills that enhance their employability and personal growth, fostering responsible citizenship and holistic development (Education Times, 29th May, 2024).

In this context, the current study posits that the Undergraduate Degree in Home Science, and particularly the Human Development and Family Studies specialization, incorporates a range of courses that inherently facilitate the acquisition of diverse life skills. These courses not only equip students with competencies relevant to personal life but also prepare them for broader life challenges at the workplace and in social situations, positioning them for personal and career success.

Human Development and Family Studies (HDFS): Insights into the Course

Human Development and Family Studies (HDFS) is one of the five specializations within the Undergraduate (Bachelor's) Program in Home Science. It draws upon multiple disciplines, including Psychology, Biology, Genetics, Behavioural Science, Education, and Social Work, to examine human development comprehensively—from conception to old age (Feldman, 2013). The curriculum is designed to provide students with a strong theoretical foundation and essential practical skills to support optimal human growth, foster healthy family dynamics, and contribute to the well-being of society as a whole.

To facilitate a holistic understanding of Human Development, the program incorporates diverse instructional methods, including videos, models, and experiments, allowing students to observe and analyse the complexities of physical, cognitive, emotional, social, and moral (Rodrigues & Coelho, 2024). Practical training in HDFS equips students with the skills necessary to navigate adulthood, marriage, parenthood, elder care, family communication, life transitions, and

relationship management. The program emphasizes hands-on learning through activities such as Lamaze training, infant care (including nappy folding and baby-wearing), evaluating children's books and toys, self-awareness exercises, psychological testing, counselling, and conflict resolution. Additionally, students engage in designing educational workshops for diverse age groups and populations, including individuals with disabilities, thereby expanding their understanding of human needs across the lifespan. Through both simulated and real-world experiences, students are encouraged to explore their potential, apply theoretical knowledge in practical settings, and develop a deeper understanding of their own identities.

The curriculum incorporates innovative pedagogical approaches that foster critical thinking and lifelong learning, moving beyond rote memorization and exam-driven objectives. Classroom discussions and debates encourage students to engage with complex social and ethical issues, such as the necessity of an engagement period before marriage, effective disciplinary strategies, parent-school collaboration, the ethics of euthanasia, and retirement planning. These discussions are widely regarded by students as thought-provoking and enlightening, providing exposure to diverse perspectives and fostering introspection about their personal and professional choices (Rodrigues & Coelho, 2024).

To offer a few examples, students who opt for Skill Enhancement Courses related to HDFS, such as Early Childhood Education, explore their creativity by developing a portfolio of activities and worksheets. They engage in planning teaching-learning experiences, implementing them in preschools with children of different age groups, and conducting self-assessments through observation and evaluation reports. This process enhances their skills in observation, reflection, theoretical and practical analysis, and documentation of personal and professional growth – essential competencies for their future careers.

Another significant component of the HDFS program is exposure to working with children with special needs. Students are introduced to this evolving field of education through visits to specialized schools, allowing them to broaden their understanding of career opportunities and deepen their empathy toward individuals with disabilities. Through these experiences, students not only gain insight into the challenges faced by these populations but also recognize their role as advocates and agents of social awareness, promoting inclusivity and equity in society.

Likewise, the course papers in the HDFS program possess a wide-ranging and in-depth relevance to different life stages or situations, rendering them amenable to substantial theoretical inquiry and exposure to practical life-skills.

Rationale

The growing emphasis on life skills in both personal and professional domains underscores the need for higher education curricula to integrate structured opportunities for students to acquire and apply these competencies. In this context, Human Development and Family Studies (HDFS) emerges as a unique specialization that inherently fosters life skill development through its multidisciplinary approach and experiential learning components.

While the HDFS curriculum is designed to facilitate life skills acquisition, there is a need to assess its actual impact on students – particularly in terms of how they perceive its effectiveness in fostering personal growth, career readiness, and broader social contributions. Understanding students' and Alumni perspectives on the life skills gained through the HDFS specialization will provide valuable insights into the strengths of the curriculum and areas for enhancement. Additionally, such an inquiry may offer empirical support for expanding the inclusion of life skills education within other undergraduate programs, thereby addressing the broader concern of graduate preparedness.

Objectives

1. To examine the impact of the Human Development and Family Studies (HDFS) curriculum on students' learning and application of essential life skills.
2. To explore students' perceptions and experiences regarding the effectiveness of the current pedagogical approaches, in fostering personal and/or professional growth.
3. To identify potential areas for improvement in the curriculum and pedagogy, based on student feedback, with the aim of enhancing the development of life skills and better preparing graduates for real-world challenges.

II. METHODOLOGY

Participants & Sampling

The study involved Alumni, final-year students, and students who had recently opted for the Human Development and Family Studies (HDFS) specialization. The discussions aimed to explore participants' perspectives on their learning experiences and the life skills they attributed to their specialization.

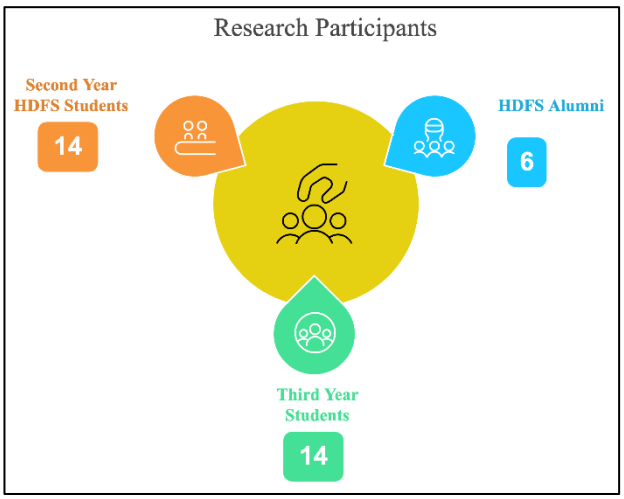

Figure 1: Details of Participants in Research

A purposive sampling technique was employed to ensure that the participants had personal experience with the course and could provide meaningful insights into its impact on their personal and professional growth. The researchers intentionally selected groups who had been exposed to various aspects of the curriculum, including theoretical instruction, practical applications, and experiential learning opportunities.

Prior to participation, informed consent was obtained from all individuals. Participants were briefed about the objectives of the study, the nature of the discussions, and their right to withdraw at any point without any consequences. Only those who voluntarily agreed to participate were included in the study. The details of the number of participants are seen in Figure 1.

Data Collection & Tool

The researchers, affiliated with a Home Science Degree College in Goa, employed Focus Group Discussions (FGDs) as the primary method of data collection. FGDs were chosen to encourage interaction among participants, allowing for the exchange of diverse perspectives and experiences related to life-skill development through the HDFS curriculum.

Each FGD lasted approximately 45 minutes and was guided by a semi-structured interview schedule. The schedule consisted of open-ended questions designed to explore various dimensions of the course. The semi-structured format provided flexibility, enabling researchers to probe deeper into specific themes that emerged during the discussions.

III. ANALYSIS

The collected data were analysed using a qualitative thematic analysis approach. The researchers transcribed the discussions and systematically coded the data to identify recurring patterns related to the development of life skills. A coding framework was developed based on both predetermined themes from the research objectives and emergent themes that surfaced during the FGDs.

Additionally, thick descriptions were used to provide rich, contextualized narratives that captured the depth of participants' experiences. While the primary focus was on qualitative analysis, some

quantitative elements (such as frequency counts of recurring themes across different FGDs) were also incorporated to highlight the prevalence of specific perspectives within the sample. This method of analysis ensured a comprehensive understanding of participants' insights, allowing the researchers to draw meaningful conclusions about the effectiveness of the curriculum in fostering life skills and identify potential areas for improvement.

IV. RESULTS

The Focus Group Discussions proved to be insightful for the researchers to have an understanding of the opinions and experiences of students and Alumna. A number of themes emerged during the discussions.

Most participants understood life skills as survival skills and something useful for their daily life. They were understood as skills that helped deal with people and life challenges and that something that was learnt as well as inborn (See Table 1).

When asked if studying HDFS had helped develop life skills all groups replied in the affirmative. The themes that emerged across groups were that the curriculum had helped shape them, and helped them in understanding themselves (see Table 2). The student groups mentioned that studying HDFS helped them understand others as well and it also equipped them to help others. Alumni and working students said it helped them professionally and final year students mentioned that it gave them clarity on what kind of jobs they could do in the future.

All three groups mentioned that the teaching methods promoted by HDFS and also used by the teachers themselves contributed greatly to their development of life skills while two groups mentioned that the teachers qualities enriched their learnings.

All three groups mentioned Early Childhood Care and Education as a subject that contributed to their life skills while two groups mentioned other subjects like Marriage and Family Dynamics, Adulthood and Ageing, Adolescent Development and Child Development (see Table 3). It must be highlighted that the groups that did not mention these subjects were those that had not specifically learnt these subjects individually due to change in syllabus and names of subjects while the newly chosen specialization students (S.Y.) had not yet studied some of the other subjects mentioned by the other two groups.

When asked what improvements were needed to enhance the development of life skills through the studying of HDFS suggestions were that the course needs more recognition/awareness of how it helps in many and all other sectors of professional and personal life (see Table 4).

Table 1

Representative Themes and Illustrations of Participants' Understanding of Life Skills

Theme	Frequency	Illustration
Survival Skills	*2 (Student Groups)*	*"Skills that meet our basic needs, like cooking, tailoring, etc." (S.Y. Student)*
Useful for Daily Life	*2*	*"Skills that help in day-to-day life." (S.Y. Student) "What we do from our waking to our sleeping." (Alumna)*
People Skills	*2 (Student Groups)*	*"It helps us to understand people." (S.Y. Student) "Its all that we learn in Human Development, like empathy, understanding, etc." (S.Y. Student)*
Skills that help Navigate Challenges	*1 (Alumni Group)*	*"Skills that help us navigate challenges (decision making, communication, interpretation, self-awareness, stress-management, emotion management)" (Alumna)*
Learning	*2 (Student Groups)*	*"It is something practical, learning new values, information" (T.Y. Student)*
Learnt and Inborn	*1 (Alumni Group)*	*"It is something learnt as well as inborn." (Alumna)*

Table 2

Representative Themes and Illustrations of Life Skills Developed from Studying Human Development and Family Studies

Theme	Frequency	Illustration
Curriculum shaped me	3	*"The Curriculum shaped me professionally."(Alumna)* *"The subject and subject teacher helped me in research skills and ethics."(Alumna)* *"I who was an introvert became an extrovert." (Alumna)* *"It helped in my personal growth, the presentation and group discussions (increased confidence)." (Alumna)*
Understanding Self	3	*"I understood my birth situation and why I feel certain things today." (S.Y. and T.Y. Student)* *"I understand my identity now." (T.Y. Student)* *"Psychological tests (EI, Self Awareness, relationships, personality how I am now and in the future) understood self, improvement, writing skills, analysis) got to know things we would have not known (tests)" (Alumna and T.Y. and S.Y. Student)*
Understanding Others	2 (Student Groups)	*"I have become more empathetic, stopped judging or shouting, understand my mother (especially during her period time), so now I react differently because I understand." (T.Y. Student)* *"The priviledge walk activity made me grateful and empathetic." (T.Y. Student)* *"The trip to Apna Ghar – I felt the pain they go through." (S.Y. Student)* *"It helped me understand people and predict behaviour, and thus act wisely." (T.Y. Student)* *"I discuss what I learn with my mother, I understood that I am different, so now I behave in a way so as to not let others feel discomfort; I have also grown in empathy (observing people and their reactions)." (T.Y. Student)*
Helping Others	2 (Student Groups)	*"I can now help myself as well as others." (T.Y. Student)* *"People come to me with their problems now that they know I study Human Development." (T.Y. Student)* *"The psychological tests – my friends benefitted from them and were happy to understand themselves." (S.Y. Student)*
Helped Professionally	2	*"I learnt punctuality and meeting deadlines." (Alumna)*
Clarity in Job Opportunities	*1 (Final Year Student Group)*	*"The field visits gave me awareness of in what all I can start in the future." (T.Y. Student)*
Teaching Methods	3	*"The teaching methods (role plays, observation, flipped learning, presentations) were nice." (Alumna)* *"It helped me in my personal growth, the presentation and group discussion (increased confidence)." (Alumna)* *"The presentations helped in worklife (communication skills, confidence to speak to boss, handling misunderstandings with colleagues, team work, empathizing)." (S.Y. Student)* *"Practicals helped (visits, resource persons, teaching in schools)." (Alumna)*
Teachers	2	*"We received one-on-one support in Human Development." (Alumna)* *"The teachers saw potential in me." (Alumna)* *"Ma'am X and the curriculum helped me (research, ethics)." (Alumna)* *"I liked the openness of the teacher in sharing about her life (school teachers*

		were not so open).” (S.Y. Student)
Other Skills	1 (Alumni Group)	*“Becoming the GS helped me develop leadership skills & conflict management.” (Alumna)* *“It was like making our own book from referencing different sources which helped me a lot.” (Alumna)*

Table 3

Representative Themes and Illustrations of Specific Subjects that Developed Life Skills

Theme	Frequency	Illustration
Early Childhood Care and Education	3	*“The teaching, lesson planning, teaching aids helped me get an edge above others about student:teacher, audits, teaching aids, learning disabilities, remedial process, intervention, classroom evaluation.” (Alumna)* *“Learning about teaching methods, writing readiness helped. I realized I love kids.” (T.Y. Student)* *“Creative Teaching Aids boosted our creativity.” (S.Y. Student)*
Marriage and Family Dynamics	2	*“5 love languages – helped me understand people better” (Alumna)* *“I learned about mate selection, and that love is a decision.” (S.Y. Student)*
Adulthood and Ageing	2	*“Adulthood & Ageing (old age, financial preparedness, death & bereavement – not easy but important to talk about it, how they feel and how to help them with their feelings.” (S.Y. Student)*
Adolescent Development	2 (Student Groups)	*“I understand my siblings better now, so I advised my parents so same mistakes can be avoided. I helped not just me but my family too.” (T.Y. Student)* *“Psychological tests helped to understand self, anger assessment results and analysis what to do.” (S.Y. Student)*
Child Development	2 (Student Groups)	*“I suggest to others about breastfeeding, diapers at a young age.” (T.Y. Student)* *“I learnt about toy selection, handling tantrums, interview with my mother – aided understanding of her & myself due to what she did, helped me deal with my younger siblings.” (S.Y. Student)*
Theories of Human Development	1 (Final Year Student Group)	*“Restrospective understanding of self, help solve my problems today.” (T.Y. Student)* *“Got new perspectives.” (T.Y. Student)*
Guidance and Counselling	1 (Alumni Group)	*“It helped normalize seeking help, communication, and to identify behaviour patterns.” (Alumna)*
Human Resource Management	1 (Alumni Group)	*“The practical skills, mock interviews helped.” (Alumna)*
Research Methods	1 (Alumni Group)	*“Research and ethics helped a lot.” (Alumna)*

Table 4

Representative Themes and Illustrations of Suggestions to Improve the Course to aid in Development of Life Skills

Theme	Frequency	Illustration
Recognition for Learnings	2	*"We should get an experience certificate for our practical work in preschools." (T.Y. Student)* *"Job market is not open to Human Development" (Alumna)* *"We are stereotyped as Home Science." (Alumna)*
Involvement in Other Activities/Sectors	2	*"Involve us in Breast-Feeding Week as we have somehting to offer to everything." (T.Y. Student)* *"Human Development would do wonders in so many sectors." (Alumna)*
Human Development Needed for all Courses/Programs	1 (Student Group)	*"Human Development should not be an optional subject – all students should have it." (S.Y. Student)* *"We should have this subject in school." (S.Y. Student)*
Networking Needed	1 (Alumni Group)	*"Networking among Alumna will help for professional growth." (Alumna)*

When asked what improvements were needed to enhance the development of life skills through the studying of HDFS suggestions were that the course needs more recognition/awareness of how it helps in many and all other sectors of professional and personal life (see Table 4). The newly chosen specialization students emphatically responded that this course should not be an optional subject (as they felt their fellow classmates had opted for other specializations) and must be present in all courses and disciplines and even in earlier classes like high school and higher secondary school. Alumni mentioned that networking in the Alumni group may help in making the HDFS presence felt by working together in the world that does not know about the skills gained through the HDFS course.

V. DISCUSSION AND CONCLUSION

Key themes emerging from the analysis highlighted positive perceptions of the Course. Alumni specifically reported that the knowledge and life-skills gained had significantly contributed to their personal and professional development, enabling them to excel in various capacities at the workplace and also effectively assume supportive roles within their families and social networks. Students highlighted specific practical exposure and skills they had picked up which would help secure a job and possible entrepreneurship opportunities. Additionally, they reported gaining awareness of personal qualities and latent skills, suggesting an improvement in self-awareness. The findings of this study reaffirm the significance of the HDFS curriculum in building life skills that influence multiple aspects of an individual's life. The Alumni highlighted life skills as those that helped professionally while the student groups spoke more about life skills in the context of managing relationships in their personal circles probably as each one spoke about skills that they were currently using in a major way.

The study highlights that students acquired life skills through multiple aspects of the Human Development and Family Studies (HDFS) curriculum. Specific subjects, such as Early Childhood Care and Education (ECCE) and Marriage and Family Dynamics, were particularly instrumental in fostering critical life competencies. Additionally, the teaching methods employed, the openness and approachability of faculty members, and various academic experiences – such as presentations, meeting deadlines, and conducting research – further contributed to students' life skills development. These experiences not only benefited

the students themselves but also had a ripple effect on their families, friends, and communities, as students applied their learning in real-life contexts. While ECCE and Marriage and Family Dynamics were noted as the most impactful subjects, participants emphasized that all subjects within the HDFS specialization contributed to the development of essential life skills. The curriculum's practical and interdisciplinary nature allowed students to gain insights into self-awareness, interpersonal relationships, family communication, and adaptability – key skills that are transferable across multiple life domains.

Despite the evident benefits of the HDFS curriculum, challenges remain in terms of its recognition in the job market and remuneration prospects. Many students felt that career opportunities and salaries in related fields need further enhancement to reflect the value of the skills acquired. Additionally, given the broad applicability of life skills, the study suggests the introduction of certificate courses for individuals who did not have the opportunity to study these topics, both within and outside the college setting. A key recommendation emerging from this study is that some Human Development and Family Studies courses or papers should be compulsory across all undergraduate programs, as the life skills they inherently advocate, are essential for all individuals, regardless of their chosen career paths. Integrating life skills education across disciplines would ensure that a greater number of students are equipped with the tools necessary for both personal growth and professional success.

In conclusion, this research underscores the far-reaching impact of Human Development and Family Studies in shaping students' competencies beyond academics. By enhancing the curriculum, expanding access to these subjects, and increasing their recognition in the job market, institutions can further contribute to holistic education that prepares students not just for careers, but for life itself.

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CONFLICT OF INTEREST

The Authors have no known conflict of interest.

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Plant Diversity and Litter-Driven Carbon Cycling in the Ecosystems of Rishivan Farm, Rivona

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Abstract: Rishivan Farm in Rivona represents a unique mosaic of agro-ecosystems and semi-natural vegetation that supports rich plant diversity and an active litter-mediated carbon cycle. This study documents the composition of major plant groups present at the farm and evaluates how their litter production contributes to carbon sequestration processes. Field observations reveal that plant diversity enhances structural complexity, stabilizes microhabitats, and supports continuous organic matter inputs in the form of fallen leaves, twigs, and decomposing biomass. The decomposition of this litter, driven by soil microorganisms and mesofauna, promotes humus formation and increases soil organic carbon stocks. The study highlights that plant species with broad leaves and rapid turnover rates contribute significantly to active carbon pools, while long-lived woody species enhance long-term carbon storage. The integration of diverse vegetation types at Rishivan Farm thus strengthens both above-ground and below-ground carbon pathways, supporting a resilient and sustainable ecosystem. Understanding these interactions provides a scientific basis for promoting biodiversity-rich farms as nature-based climate solutions in Goa and similar tropical landscapes.

Keywords: Rishivan Farm, plant diversity, plant litter, Rivona, carbon cycle

I. INTRODUCTION

The state of Goa lies within the Western Ghats and serves as a transitional zone between its northern and southern regions. The village of Rivona, located in the Sanguem taluka about 2 km from Zambaulim, in the South Goa district. Village is known for its lush greenery, natural springs, and historical significance as a cradle of early Indian civilization and a retreat for ancient sages. This village is situated on the banks of the peaceful Kushavati River. The Rivona (or Pandava) caves are found within the forested area outside the village, and the Shri Vimleshwar temple stands at the village's edge near the road leading to the caves. Historically, it was believed to be called 'Rishivan', meaning 'forest of the sages. Rivona provides an ideal setting for such an investigation due to its rich biodiversity, supported by semi-evergreen forests and dense vegetation, and researchers have reported butterfly diversity in Rivona,

positioned near the foothills of the Western Ghats (Rao et al., 2021).

Rishivan Farm is an agricultural landscape rich in biodiversity located in the village of Rivona. The farm falls within the expansive influence of the Western Ghats, a globally recognized biodiversity hotspot.

Study Area

The forest of the wise man or Rishivan, which is situated in Rivona village, has been known since ancient times. It was earmarked for numerous monks and hermits who took up their wandering ascetics at the bank of the Kushavati River. The isolatory environment of the Rivona village immersed in wilderness as a peaceful and serene environment for one. The area is surrounded by spirituality and nature's generosity. The location of the Rishivan Farm is shown in Figure 1. Rishivan farm in Rivona village is surrounded by Sanguem Taluka of South Goa district in Goa, India. Just about 29 km from the district headquarters in Margao. Undulating topography, lateritic soils, terraced fields, and mixed plantation systems typical of interior Goa characterize the area. The area is blessed with rich fertility, where one can see large plantation that grows spices and tropical crops as part of the traditional Goan Kulagar. The owner of Rishivan Farm, Mr. Pandurang Patil, manages the land using brilliant ecological ideas that promote eco-friendly and sustainable agricultural practices. Farm activities are carried out with minimal chemical input, relying mainly on organic pesticides, composted organic waste, and other natural methods to maintain soil fertility. The farm also follows mixed cropping systems, which help reduce the risk of crop failure, enhance soil health, and support long-term sustainability. To further improve land use efficiency, Mr. Patil has adopted terrace-type plantation techniques, which prevent soil erosion, support water conservation, and allow cultivation on uneven terrain. Along with this, he incorporates modern agricultural methods and tools, making farming operations easier, more efficient, and more productive. The well-being of the farm's perennial vegetation is maintained through regular labour work, continuous monitoring, and careful ecological management. With annual rainfall exceeding 3000 mm, Rishivan Farm provides an ideal environment for diverse flora and an active nutrient cycle. This unique setting also offers valuable opportunities for studying ecosystem services, biodiversity, and human–nature interactions, making the farm a rich ecological learning space.

Ecology and Plant diversity of Rishivan Farm

Ecology of Rishivan farm functions as a mosaic ecosystem where natural and agricultural vegetation intersect. Lust rural area with rich

soils and cultural backgrounds, such as the Rivona caves. The farm landscape is with vertical layers of canopy such as coconut, arecanut and Jackfruit, understory trees and shrubs include Bilimbi (*Averrhoa bilimbi*), Cashew (*Anacardium occidentale*), mango (*Mangifera indica)*, Teak (*Tectona grandis*), Jamun (*Syzygium cumini*), Curry leaves *(Murraya koenigi*), Banana (*Musa acuminata*), spices, herbs, and so on. The property is surrounded by lush green evergreen forest patches meeting at the foothills of the mountains. The Rishivan farm is surrounded by Rivona village, which is known for the sacred groves. Since ancient times, the forest patches have been protected by local communities for a spiritual belief. They aimed for protection from deforestation and biodiversity reservoirs. The farm cultivates a variety of vegetation that includes cashew (*Anacardium occidentale*), Coconut (*Cocos nucifera*), arecanut (*Areca catechu*), Mango (*Mangifera indica*), Jackfruit (*Artocarpus heterophyllus)*, Grapefruit (*Citrus paradisi)* and Spices, majorly Nutmeg (*Myristica fragrans)* and Black pepper (*Piper nigrum)*. The ancient forest trees help in soil health and nutrient cycling. The flowing perennial streams in Rishivan are the source of freshwater ecology. The plantation at Rishivan farm is shown in Figure 2 (a-d). One can observe a mixed habitat of birds, butterflies, reptiles, and small mammals. This ecological balance of the region assists in preventing soil erosion, supports pollinators and enhances the nutrient cycle, and purifies the air quality. The farm manages terraced slopes, which helps prevent soil erosion and organic matter turnover. The farm also hosts nature trails introducing visitors to farm-to-table local ecology. It benefits in several ways, such as a base for future tourism, balancing farming with sustainable practices, and conservation of biodiversity. The farm is not just an agricultural site for study but also hosts a learning area with practical knowledge in sustainable living.

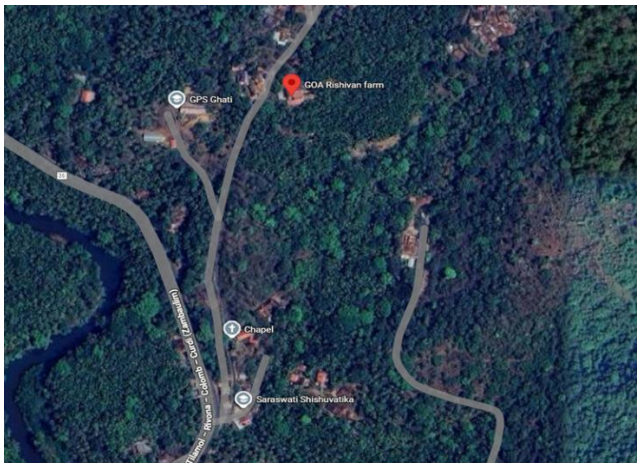

Figure 1: Location of Rishivan Farm (www.googleearth.com)

Rishivan Farm is famous for its diversity of plants available in the farm. Different types of

Table 1: The list of plants found at Rishivan Farm

Sr. No.	Common Name	Scientific Name	Family Name	Latitude	Longitude
1	Mango	*Mangifera indica*	Anacardiaceae	15.172628°	74.108981°
2	Jackfruit	*Artocarpus heterophyllus*	Moracea	15.172644°	74.108929°
3	Cashew	*Anacardium occidentale*	Anacardiaceae	15.173042°	74.109057°
4	Nutmeg	*Myristica fragrans*	Myristicaceae	15.172751°	74.109987°
5	Guava	*Psidium guajava*	Myrtaceae	15.172898°	74.105461°
6	Starfruit	*Averrhoa carambola*	Oxalidaceae	15.172868°	74.109341°
7	Jamun	*Syzygium cumini*	Myrtaceae	15.173291°	74.109233°
8	Kokum	*Garcinia indica*	Glusiaceae	15.173071°	74.109209°
9	Curry Leaves	*Murraya koenigii*	Rutaceae	15.173316°	74.109216°
10	Sandalwood	*Santalum album*	Santalaceae	15.172831°	74.109092°
11	Bilimbi	*Averrhoa bilimbi*	Oxalidaceae	15.172869°	74.109344°
12	Grapefruit	*Citrus paradisi*	Rutaceae	15.172817°	74.109294°

Figure 2 (a-d): Plantation at Rishivan Farm

species, aromatic plants, fruit trees, and medicinal plants are known for their uniqueness.

Some of the plants are mango (*Mangifera indica*), jackfruit (*Artocarpus heterophyllus*), cashew (*Anacardium occidentale*), nutmeg (*Myristica fragrans*), guava (*Psidium guajava*), starfruit (*Averrhoa carambola*), jamun (*Syzygium cumin*i), kokum (*Garcinia indica*), curry leaves (*Murraya koenigii*), sandalwood (*Santalum album*), bilimbi (*Averrhoa bilimbi*), and grapefruit (*Citrus paradisi*). These cultivated species from a diverse orchard landscape where spice plants thrive in shaded zones and fruit–bearing trees create multi-multi-layered canopy structure that supports overall ecological balance. Rather than these trees, other trees are also available around the farm, which are naturally grown and have high potential, and which help in balancing the ecosystem. The list of plants which are found to be present at Rishivan Farm are given in Table **1**.

Collection and decomposition of plant litter

Collection of plant litter was caried out from a defined agricultural plot. The primary plots were established and subdivided into specific quadrants 10m × 10 m, each for the experimental tree. The litter was collected from the marked quadrants around each species randomly by random sampling method. The materials collected were senesced leaves, twigs, reproductive parts fallen inside the quadrant. The litterfall was collected in a paper bag and brought to laboratory where it was cleaned, weighed and dried at 70°C until constant weight (g m^{-2}). Twenty grams of air-dried leaf litter from each species were placed in nylon litterbags measuring 20 × 15 cm with a 2-mm mesh. This mesh size prevented the loss of small litter fragments while still allowing airflow for microbial decomposition. For each species, 12 bags were prepared and distributed randomly in three replicates at two soil depths: the surface layer (0–15 cm) and the subsurface layer (15–30 cm), which corresponds to the plough layer commonly disturbed during cultivation. The bags were inserted carefully into the soil using a spade to create narrow slits beneath the tree canopy, and iron pegs were used to mark their positions. Every month, three bags from each species were recovered and taken to the laboratory. To prevent loss of decomposed material, the bags were placed in paper bags for transport. In the lab, they were gently washed to remove attached soil and debris. The remaining litter was then dried at 70 °C until constant weight was achieved, and the reduction in mass relative to the initial weight was recorded as the measure of decomposition (Verma et al., 2022).

Results

Litterfall Production

Litterfall varied markedly among the studied tree species at Rishivan Farm. The total litterfall exhibited a unimodal pattern over the study period, with pronounced seasonal fluctuations observed across all species on a month-wise basis. Peak litter deposition occurred prior to the onset of the monsoon season, coinciding with increased leaf shedding and senescence. Among the species evaluated, *Mangifera indica*, *Artocarpus heterophyllus*, and *Anacardium occidentale* contributed significantly higher amounts of litterfall compared to the other species, indicating species-specific differences in biomass allocation and phenology. The litter consisted primarily of senesced leaves, followed by twigs and reproductive parts, though their relative proportions varied with season and species.

Litter Decomposition Dynamics

Litter decomposition, expressed as the reduction in mass relative to the initial dry weight, showed clear differences among species and soil depths. Overall, decomposition rates increased progressively with time for all species. The highest rates of mass loss were recorded in most of the studied species, whereas Murraya koenigii exhibited comparatively slower decomposition. Litter placed in the surface soil layer (0–15 cm) decomposed more rapidly than that buried in the subsurface layer (15–30 cm), reflecting the greater availability of oxygen, microbial activity, and favorable microclimatic conditions near the soil surface. Monthly retrieval of litterbags revealed a steady decline in litter mass, with more rapid losses during periods of higher temperature and moisture. The interaction between species type and soil depth significantly influenced decomposition patterns, highlighting the role of litter quality and soil environment in regulating decomposition processes.

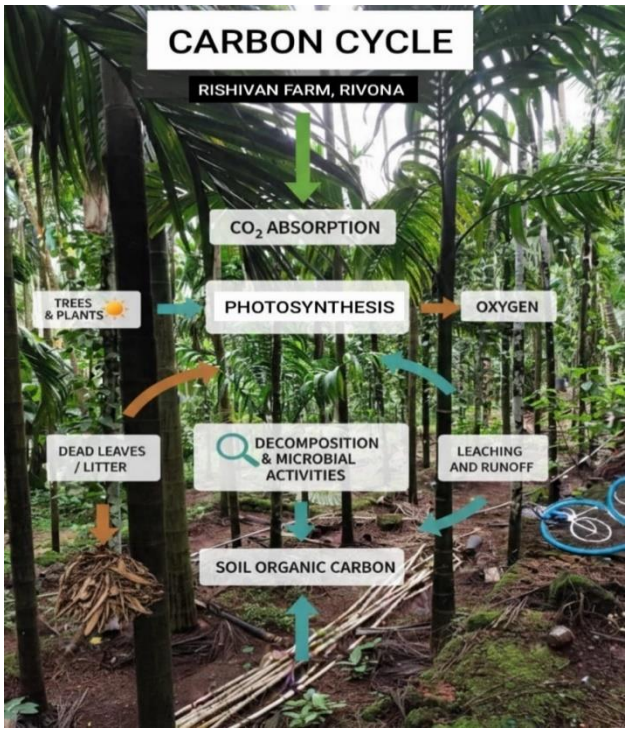

Figure 3: Schematic representation of plant litter dynamics and carbon cycling.

Implications for Carbon Cycling

The continuous input of litter from agroforestry tree species formed a substantial organic matter

pool, driving carbon cycling within the system. Species producing softer, nutrient-rich litter showed faster decomposition, facilitating quicker nutrient release and carbon turnover. In contrast, species such as *Anacardium occidentale*, which produce more lignified and woody litter, decomposed more slowly, promoting longer-term carbon retention in the soil. Overall, the results demonstrate that the agroforestry system at Rishivan Farm supports active litter production and decomposition processes, contributing to soil organic carbon accumulation and functioning as an effective carbon sink. The observed variability among species underscores the importance of species selection in enhancing carbon sequestration and nutrient cycling in agroforestry ecosystems.

Discussion

At Rishivan Farm, the carbon cycle functions primarily through the continuous input of plant litter, which includes fallen branches, dried leaves, fruits, small stems, and root exudates. This litter accumulates mainly before the monsoon season when trees shed large quantities of organic material. Such plant litter forms the initial pool of organic matter that drives the carbon cycle within the farm ecosystem. Similar studies were reported in the arid western region of India on litter production and litter dynamics in different agroforestry systems (Verma et al., 2021). Once deposited on the soil surface, this organic matter is decomposed by a diverse community of microorganisms such as fungi, bacteria, earthworms, and insects. The warm temperatures and high moisture levels typical of tropical regions like Rivona accelerate this decomposition process. Some species, such as cashew, produce hard, woody litter that decomposes more slowly, allowing carbon to remain stored in the soil for longer periods. Through decomposition, plant litter is transformed into nutrients and stable forms of soil organic carbon. Plants play a crucial role by absorbing carbon dioxide (CO_2) from the atmosphere through photosynthesis and storing it in their leaves, roots, and stems. Perennial species, with their deeper and more extensive root systems, contribute significantly to long-term carbon storage by depositing carbon deeper into the soil profile. As a result, Rishivan's agroforestry system acts as an effective natural carbon sink. During phytolith formation, carbon also becomes trapped within durable, silica-based structures produced by plants. These structures, known as phytoliths, can occlude carbon within their silicified matrix (Parr & Sullivan, 2005; Song et al., 2012; Guo et al., 2015; Song et al., 2016). The concentration of phytolith-occluded carbon (PhytOC) typically ranges from 0.1% to 10% (Jones & Milne, 1963; Parr & Sullivan, 2005,

2011; Parr et al., 2010; Santos et al., 2010; Guo et al., 2015). However, the mechanisms responsible for carbon occlusion in phytoliths and the origin of this carbon remain subjects of scientific debate (Alexandre et al., 2016; Santos & Alexandre, 2017; Santos et al., 2018). The carbon cycle and plant litter dynamics is shown in Figure 3. Rishivan Farm demonstrates how an eco-friendly agricultural landscape can function efficiently while maintaining a balanced and resilient carbon cycle through the combined effects of plant diversity, mixed cropping, perennial vegetation, and natural decomposition processes. The farm supports a wide range of plant species, including perennial trees, shrubs, seasonal crops, and ground vegetation, all of which contribute significantly to soil enrichment. Mixed cropping systems at Rishivan further strengthen carbon retention by allowing multiple species to grow within the same area, increasing the volume and diversity of root biomass and organic material entering the soil. This practice supports a wider array of soil microorganisms, enhances microbial activity, reduces soil erosion, and increases the overall resilience of the farming ecosystem. Mixed cropping also reduces the risk of total crop failure, making the farming system more sustainable while simultaneously improving soil structure and fertility (Cook, 2006). As organic matter decomposes, it forms humus, a highly stable carbon pool that helps store carbon for long periods while improving soil texture, water retention, and aeration. This continuous interplay between carbon input from vegetation, decomposition by microorganisms, and carbon storage in soil organic matter forms the backbone of Rishivan's functional carbon cycle. Additionally, the eco-farm benefits from terrace-type plantation methods and modern agricultural techniques that reduce soil erosion, improve water infiltration, and allow efficient use of hilly or uneven terrain, thereby enhancing carbon storage capacity (Dorren & Rey, 2004). The constant supply of organic litter creates a stable microhabitat for decomposers, ensuring consistent nutrient release and maintaining soil fertility throughout the year. These ecological processes collectively build environmental resilience by improving soil quality, enhancing biodiversity, and supporting a long-term balance between carbon release and carbon storage. The ongoing presence of perennial vegetation ensures that even in dry seasons, a protective mulch layer remains on the soil surface, conserving moisture and shielding microbial communities, which helps maintain the continuity of nutrient cycling. Rishivan Farm thus stands as a strong example of how ecological farming practices can create a self-sustaining carbon cycle where plant diversity, organic matter recycling, and

soil biological activity interact harmoniously. Through this natural cycle of litter input, decomposition, carbon sequestration, and plant regrowth, the farm not only sustains its agricultural productivity but also functions as a carbon sink, contributing to climate regulation and environmental health. Most evidence suggests that the majority of organic carbon embedded during phytolith formation is derived from photosynthetic processes. The role of plants in regulating the terrestrial Si cycle has gained increasing attention. Song et al. (2012) highlight that many plants actively uptake and redistribute biogenic silica (bSi), influencing soil Si availability and contributing to long-term carbon stabilization. But the global significance of plant-mediated Si cycling for carbon sequestration remains insufficiently quantified, suggesting an important avenue for future biogeochemical modeling.

CONCLUSION

Rishivan Farm exemplifies how biodiversity-rich agroecosystems can simultaneously sustain agricultural productivity and enhance ecological resilience. The mosaic of cultivated and semi-natural vegetation supports continuous litter inputs that drive nutrient cycling, humus formation, and long-term carbon sequestration. Diverse plant species contribute differently to carbon dynamics: fast-turnover species enrich active carbon pools, while perennial and woody vegetation secure stable carbon fractions in deeper soil layers. The integration of mixed cropping, terrace farming, and minimal chemical inputs further strengthens soil fertility, reduces erosion, and promotes microbial activity essential for decomposition. These processes collectively establish Rishivan Farm as a functional carbon sink, demonstrating the role of biodiversity in regulating biogeochemical cycles under tropical monsoon conditions. Beyond its local significance, the farm provides a model for nature-based climate solutions in Goa and similar landscapes, where ecological farming practices can mitigate climate change while preserving cultural and biological heritage.

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